

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.09.98

Test oil : ISO 4113

Combination No. : 0 402 670 815

Injection pump

Pump designation : PE12P120A320LS7923

EP type number : 0 412 620 851

Governor

Governer design. : RSV375...950POA701

Governer no. : 0 421 833 627

Cust. part No. : 0 280 742 002

Customer-spec. information

Customer : MB-NFZ

Motor : OM 444 LA

Power KW : 605.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 200

Tolerance l/h : ± 20.0

Test nozzle holde assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 12- 1- 5- 9- 8

: - 3- 4- 11- 10

: - 2- 6- 7

Phasing : 0-45-60-105-120

: -165-180-225-240

: -285-300-345

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 930

Rack travel in mm : 13.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 256.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Rated speed rpm : 375

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.85
Tolerance mm : \pm 0.55

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 930
Aneroid pressure

hPa : 1500

Del. quantity
cm³/1000 strokes : 256.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 90.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.40

Rated speed rpm : 980

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1055

Tolerance 1/min : \pm 5

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 13.00

Testing:

Rated speed rpm : 375

rack travel mm : 5.20

Tolerance mm : \pm 0.10

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 930

rack travel mm : 13.40

Tolerance mm : \pm 0.10

Rated speed rpm : 600

rack travel mm : 12.80

Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600

Pressure hPa : 1500

rack travel mm : 13.40

Tolerance mm : \pm 0.10

Rated speed rpm : 600

Pressure hPa : -

rack travel mm : 7.90

Tolerance mm : \pm 0.10

2-stage LDA setting

Rated speed rpm : 600

Pressure hPa : 1050

rack travel mm : 12.80

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 450

rack travel mm : 8.50

Tolerance mm : \pm 0.10

Pressure hPa : 800

rack travel mm : 11.40

Tolerance mm : \pm 0.05

Pressure hPa : 1200

rack travel mm : 13.10

Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1050

Rated speed rpm : 600

Del. quantity

cm³/1000 strokes : 273.0

Tolerance

cm³/1000 strokes : \pm 1.5

Check tolerance

cm³/1000S. : \pm 4.5

Speed

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity

cm³/1000 strokes : 146.0

Tolerance

cm³/1000 strokes : \pm 1.0

Check tolerance

cm³/1000S. : \pm 4.0

Speed

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm³/1000 strokes : 275.0

Tolerance

cm³/1000 strokes : \pm 15.0

Check tolerance

cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 375

Rack travel in mm : 5.20

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 17.0

Tolerance

cm³/1000 strokes : \pm 3.0

Check tolerance

cm³/1000S. : \pm 6.0

Speed

Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.09.98

Test oil : ISO 4113

Combination No. : 0 402 676 838

Injection pump

Pump designation : PE6P120A320LS7909

EP type number : 0 412 626 963

Governor

Governer design. : RSV550...800POA671

Governer no. : 0 421 833 589

Cust. part No. : 0270743402

Customer-spec. information

Customer : MB-NFZ

Motor : OM441 LA eoromot

Power KW : 218.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 105

Tolerance l/h : ± 15.0

Test nozzle holde assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-

: 1

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 780

Rack travel in mm : 14.50
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 229.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 550

Rack travel in mm : 4.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 780

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 229.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 80.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 830
rack travel mm : 13.50

Rated speed rpm : 875
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 831
rack travel mm : 13.50

Rated speed rpm : 876
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 832
rack travel mm : 13.50

Rated speed rpm : 877
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 833
rack travel mm : 13.50

Rated speed rpm : 878
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 834
rack travel mm : 13.50

Rated speed rpm : 879
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 835
rack travel mm : 13.50

Rated speed rpm : 880
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 70.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

Testing:

Rated speed rpm : 550
rack travel mm : 4.30
Tolerance mm : \pm 0.10

rack travel mm : 2.00

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Rated speed rpm : 575
Tolerance 1/min : \pm 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 780
rack travel mm : 14.50
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 14.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

CRT ZERO POSITION

Rack travel in mm : 9.25
Tolerance mm : \pm 0.15

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Pressure hPa : 400
rack travel mm : 1.20
Tolerance mm : \pm 0.05

Pressure hPa : 700
rack travel mm : 3.60
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 234.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 138.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 550
Rack travel in mm : 4.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.09.98
Test oil : ISO 4113
Combination No. : 0 400 074 878T4
Injection pump
Pump designation : PES4M55C320RS188
EP type number : 0 410 054 935
Governor
Governor design. : RSF400/2000M82
Governor no. : 0 420 021 283

Cust. part No. : A 40007-4878

Customer-spec. information
Customer : DPICO
Motor : OM601-2.3L
Power KW : 58.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

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REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
: 0.80
: 1.00

Start of delivery blocking

°NW after s.o.d. : 15.50
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 37.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

Rated speed rpm : 400

Rack travel in mm : 4.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 5.5

Tolerance
cm³/1000 strokes : \pm 0.5

Spread
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25
Tolerance mm : \pm 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure
ALDA / ADA hPa : 1100

Del. quantity
cm³/1000 strokes : 37.5

Tolerance
cm³/1000 strokes : \pm 0.5

Check tolerance
cm³/1000S. : \pm 1.5

Spread
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2250
rack travel mm : 7.60
Tolerance mm : \pm 0.25

Rated speed rpm : 2550
rack travel mm : 0.50

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Tolerance mm : \pm 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever
position degree : 12.5
tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.90

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500
rack travel mm : 3.40
Tolerance mm : \pm 0.10

Load pick-up

Rated speed rpm : 250
rack travel mm : 13.00

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 4.90
Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.15
Tolerance mm : \pm 0.05

Rated speed rpm : 2000
rack travel mm : 12.15
Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 940
rack travel mm : -0.10

Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.40
Tolerance mm : \pm 0.10

Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -1.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2000
Del. quantity
cm³/1000 strokes : 41.8
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2250
rack travel mm : 7.60
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 24.1
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.60

Tolerance mm : \pm 1.50
Del. quantity
cm³/1000 strokes : 60.3
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 4.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 6.8
Check tolerance
cm³/1000S. : \pm 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

control lever
position degree : > 47.00

control lever
position degree : < 43.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 12.5
tolerance degree : \pm 2.0

Rated speed rpm : 425

Rack travel in mm : 8.70
Tolerance mm : \pm 0.80
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 3.5
Check tolerance
cm³/1000S. : \pm 4.5

Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 400

Vacuum hPa : -450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.09.98
Test oil : ISO 4113
Combination No. : 0 400 074 879T4
Injection pump
Pump designation : PES4M55C320RS188
EP type number : 0 410 054 935
Governor
Governor design. : RSF400/2000M80
Governor no. : 0 420 021 281

Cust. part No. : A 40007-4879

Customer-spec. information
Customer : DPICO
Motor : OM601-2.3l
Power KW : 58.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
: 0.80
: 1.00

Start of delivery blocking

°NW after s.o.d. : 15.50
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 37.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

Rated speed rpm : 400

Rack travel in mm : 4.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 5.5

Tolerance
cm³/1000 strokes : \pm 0.5

Spread
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25
Tolerance mm : \pm 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Ref. pressure

ALDA / ADA hPa : -

Del. quantity
cm³/1000 strokes : 37.5

Tolerance
cm³/1000 strokes : \pm 0.5

Check tolerance
cm³/1000S. : \pm 1.5

Spread
Tolerance

cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2250
rack travel mm : 7.40

Tolerance mm : \pm 0.25

Rated speed rpm : 2550
rack travel mm : 0.50

Tolerance mm : \pm 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever
position degree : 14.0
tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 4.90

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500
rack travel mm : 3.40
Tolerance mm : \pm 0.10

Load pick-up

Rated speed rpm : 250
rack travel mm : 12.30

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 4.90

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.15
Tolerance mm : \pm 0.05

Rated speed rpm : 2000
rack travel mm : 12.15
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 2000

Del. quantity
cm3/1000 strokes : 41.8
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 2.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 2250
rack travel mm : 7.40
Tolerance mm : \pm 0.25
Del. quantity
cm3/1000 strokes : 24.1
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 3.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.60
Tolerance mm : \pm 1.50
Del. quantity
cm3/1000 strokes : 59.0
Tolerance
cm3/1000 strokes : \pm 4.0
Check tolerance
cm3/1000S. : \pm 5.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 4.90
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 6.8
Check tolerance
cm3/1000S. : \pm 2.3
Spreed
Check tolerance
cm3/1000S. : 1.5

control lever
position degree : > 47.00

control lever
position degree : < 44.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 14.0
tolerance degree : \pm 2.0

Rated speed rpm : 425

Rack travel in mm : 8.70
Tolerance mm : \pm 0.80
Del. quantity
cm3/1000 strokes : 21.0
Tolerance
cm3/1000 strokes : \pm 3.5
Check tolerance
cm3/1000S. : \pm 4.5
Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 400
Vacuum hPa : -450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.09.98
Test oil : ISO 4113

Combination No. : 0 400 074 885T4

Injection pump
Pump designation : PES4M55C320RS167
EP type number : 0 410 054 960

Governor
Governor design. : RSF400/2000M56-14
Governor no. : 0 420 021 271

Cust. part No. : A 40007-4885

Customer-spec. information
Customer : DPICO
Motor : OM601-2.3L (Exp)
Power KW : 58.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

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REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
: 0.80
: 1.00

Start of delivery blocking

°NW after s.o.d. : 15.50
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 37.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

Rated speed rpm : 400

Rack travel in mm : 5.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 5.5

Tolerance
cm³/1000 strokes : ± 0.5

Spread
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25
Tolerance mm : ± 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure
ALDA / ADA hPa : 1100

Del. quantity
cm³/1000 strokes : 37.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Spread
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2250
rack travel mm : 7.40
Tolerance mm : ± 0.25

Rated speed rpm : 2550
rack travel mm : 0.50

Tolerance mm : ± 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever
position degree : 14.0
tolerance degree : ± 2.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.00

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500
rack travel mm : 3.40
Tolerance mm : ± 0.10

Load pick-up

Rated speed rpm : 250
rack travel mm : 12.50

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 5.00
Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.15
Tolerance mm : ± 0.05

Rated speed rpm : 1800
rack travel mm : 11.90
Tolerance mm : ± 0.10

Rated speed rpm : 2000
rack travel mm : 11.80
Tolerance mm : ± 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 940
rack travel mm : -0.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.40
Tolerance mm : \pm 0.10

Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -1.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1800
Del. quantity
cm³/1000 strokes : 40.6
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2000
Spreed
Del. quantity
cm³/1000 strokes : 40.7
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : 1100

Rated speed rpm : 2250
rack travel mm : 7.40
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 24.1
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.60
Tolerance mm : \pm 1.50
Del. quantity
cm³/1000 strokes : 59.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 6.8
Check tolerance
cm³/1000S. : \pm 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

control lever
position degree : > 47.00

control lever
position degree : < 44.50

SETTING PNEUMATIC FAST IDLE (PLA)
(PLA) POSITION

control lever
position degree : 14.0
tolerance degree : \pm 2.0

Rated speed rpm : 425

Rack travel in mm : 9.10
Tolerance mm : \pm 0.80

Del. quantity
cm³/1000 strokes : 22.5

Tolerance
cm³/1000 strokes : \pm 3.5

Check tolerance
cm³/1000S. : \pm 4.5

Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 400
Vacuum hPa : -450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.09.98
Test oil : ISO 4113
Combination No. : 0 400 074 886T4
Injection pump
Pump designation : PES4M55C320RS167
EP type number : 0 410 054 960

Governor
Governor design. : RSF400/2000M55-7
Governor no. : 0 420 021 268

Cust. part No. : A 40007-4866

Customer-spec. information
Customer : DPICO
Motor : OM601-2.3l (Dom)
Power KW : 58.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

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REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
: 0.80
: 1.00

Start of delivery blocking

°NW after s.o.d. : 15.50
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 37.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 5.5
Tolerance
cm³/1000 strokes : ± 0.5
Spreed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25
Tolerance mm : ± 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : -
Del. quantity
cm³/1000 strokes : 37.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 1.5
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2250
rack travel mm : 7.70
Tolerance mm : ± 0.25

Rated speed rpm : 2550
rack travel mm : 0.50
Tolerance mm : ± 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000
CRT mm max. : 1.45

LOW IDLE

control lever
position degree : 14.0

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500
rack travel mm : 3.50
Tolerance mm : ± 0.10

Load pick-up

Rated speed rpm : 250
rack travel mm : 12.20

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 5.10
Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.15
Tolerance mm : ± 0.05

Rated speed rpm : 1800
rack travel mm : 11.90
Tolerance mm : ± 0.10

Rated speed rpm : 2000
rack travel mm : 11.80
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 1800
Del. quantity
cm³/1000 strokes : 40.6

Tolerance
 cm3/1000 strokes : + 0.8
 Check tolerance
 cm3/1000S. : + 1.8
 Spreed
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 3.0

Ref. pressure
 ALDA / ADA hPa : -
 Rated speed rpm : 2000
 Spreed
 Del. quantity
 cm3/1000 strokes : 40.7
 Tolerance
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 2.0
 Spreed
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 3.0

HIGH IDLE

Ref. pressure
 ALDA / ADA hPa : -
 Rated speed rpm : 2250
 rack travel mm : 7.70
 Tolerance mm : + 0.25
 Del. quantity
 cm3/1000 strokes : 25.1
 Tolerance
 cm3/1000 strokes : + 2.0
 Check tolerance
 cm3/1000S. : + 3.0
 Spreed
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 21.60
 Tolerance mm : + 1.50
 Del. quantity
 cm3/1000 strokes : 59.0
 Tolerance
 cm3/1000 strokes : + 4.0
 Check tolerance
 cm3/1000S. : + 5.0
 Spreed

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Tolerance
 cm3/1000 strokes : 6.0
 Check tolerance
 cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 400
 rack travel mm : 5.10
 Tolerance mm : + 0.10
 Del. quantity
 cm3/1000 strokes : 6.8
 Check tolerance
 cm3/1000S. : + 2.3
 Spreed
 Check tolerance
 cm3/1000S. : 1.5

control lever
 position degree : > 47.00

control lever
 position degree : < 44.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
 position degree : 14.0

Rated speed rpm : 425

Rack travel in mm : 8.80
 Tolerance mm : + 0.80
 Del. quantity
 cm3/1000 strokes : 22.0
 Tolerance
 cm3/1000 strokes : + 3.5
 Check tolerance
 cm3/1000S. : + 4.5
 Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 400
 Vacuum hPa : -450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.09.98
Test oil : ISO 4113

Combination No. : 0 400 075 922T4

Injection pump
Pump designation : PES5M55C320RS168
EP type number : 0 410 055 978

Governor
Governor design. : RSF385/2000M56-15
Governor no. : 0 420 021 272

Cust. part No. : A 40007-5922

Customer-spec. information
Customer : DPICO
Motor : OM602-2.9L
Power KW : 70.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288
: 0.80
: 1.00

Start of delivery blocking

°NW after s.o.d. : 15.50
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 37.5

Tolerance
cm3/1000 strokes : ± 0.5

Check tolerance
cm3/1000s. : ± 1.5

Speed

Tolerance
cm3/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 3.0

Rated speed rpm : 385

Rack travel in mm : 5.70
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 8.0

Tolerance
cm3/1000 strokes : \pm 0.5

Spreed
Tolerance
cm3/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25
Tolerance mm : \pm 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure
ALDA / ADA hPa : 1100

Del. quantity
cm3/1000 strokes : 37.5

Tolerance
cm3/1000 strokes : \pm 0.5

Check tolerance
cm3/1000S. : \pm 1.5

Spreed
Tolerance
cm3/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2250
rack travel mm : 7.40
Tolerance mm : \pm 0.25

Rated speed rpm : 2550
rack travel mm : 0.50

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Tolerance mm : \pm 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever
position degree : 14.0
tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 385
rack travel mm : 5.70

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500
rack travel mm : 3.70
Tolerance mm : \pm 0.10

Load pick-up

Rated speed rpm : 250
rack travel mm : 12.50

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 5.70
Rated speed rpm : 385

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.15
Tolerance mm : \pm 0.05

Rated speed rpm : 1800
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 2000
rack travel mm : 11.80
Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
 Ref. pressure
 ALDA / ADA hPa : 940
 rack travel mm : -0.10
 Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000
 Ref. pressure
 ALDA / ADA hPa : 900
 rack travel mm : -0.40
 Tolerance mm : \pm 0.10

Ref. pressure
 ALDA / ADA hPa : 750
 rack travel mm : -1.50
 Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 1800
 Del. quantity
 cm³/1000 strokes : 40.6
 Tolerance
 cm³/1000 strokes : \pm 0.8
 Check tolerance
 cm³/1000S. : \pm 1.8
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 2000
 Spreed
 Del. quantity
 cm³/1000 strokes : 40.7
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

HIGH IDLE

Ref. pressure
 ALDA / ADA hPa : 1100

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Rated speed rpm : 2250
 rack travel mm : 7.40
 Tolerance mm : \pm 0.25
 Del. quantity
 cm³/1000 strokes : 24.1
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 21.60
 Tolerance mm : \pm 1.50
 Del. quantity
 cm³/1000 strokes : 59.0
 Tolerance
 cm³/1000 strokes : \pm 4.0
 Check tolerance
 cm³/1000S. : \pm 5.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 385
 Del. quantity
 cm³/1000 strokes : 9.3
 Check tolerance
 cm³/1000S. : \pm 2.3
 Spreed
 Check tolerance
 cm³/1000S. : 1.5

control lever
 position degree : > 47.00

control lever
 position degree : < 43.50

SETTING PNEUMATIC FAST IDLE (PLA)
(PLA) POSITION

control lever
position degree : 14.0
tolerance degree : \pm 2.0

Rated speed rpm : 400

Rack travel in mm : 8.60
Tolerance mm : \pm 0.80

Del. quantity
cm³/1000 strokes : 20.5

Tolerance
cm³/1000 strokes : \pm 3.5

Check tolerance
cm³/1000S. : \pm 4.5

Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 385
Vacuum hPa : -450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.09.98
Test oil : ISO 4113
Combination No. : 0 400 075 923T4
Injection pump
Pump designation : PES5M55C320RS168
EP type number : 0 410 055 978
Governor
Governor design. : RSF385/2000M55-8
Governor no. : 0 420 021 269
Cust. part No. : A 40007-5923

Customer-spec. information
Customer : DPICO
Motor : OM602-2.9L (Dom)
Power KW : 69.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 469 990 351
Inlet press. bar : 1.0
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : + 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

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REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 2.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 21.00
Tolerance mm : + 1.00
Firing order : 1- 2- 4- 5- 3
Phasing : 0-72-144-216-288
: 0.80
: 1.00

Start of delivery blocking

°NW after s.o.d. : 15.50
Tolerance : + 0.20
Check
tolerance °NW : + 0.30
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000
Rack travel in mm : 12.15
Tolerance mm : + 0.05
Del. quantity
cm3/1000 strokes : 37.5
Tolerance
cm3/1000 strokes : + 0.5
Check tolerance
cm3/1000S. : + 1.5
Spreed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

Rated speed rpm : 385

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 8.0

Tolerance
cm³/1000 strokes : \pm 0.5

Spreed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25
Tolerance mm : \pm 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Ref. pressure

ALDA / ADA hPa : -

Del. quantity
cm³/1000 strokes : 37.5

Tolerance
cm³/1000 strokes : \pm 0.5

Check tolerance
cm³/1000S. : \pm 1.5

Spreed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2250
rack travel mm : 7.70
Tolerance mm : \pm 0.25

Rated speed rpm : 2550
rack travel mm : 0.50

Tolerance mm : \pm 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever
position degree : 14.0
tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 385
rack travel mm : 5.60

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500
rack travel mm : 3.80
Tolerance mm : \pm 0.10

Load pick-up

Rated speed rpm : 250
rack travel mm : 12.20

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 5.60
Rated speed rpm : 385

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.15
Tolerance mm : \pm 0.05

Rated speed rpm : 1800
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 2000
rack travel mm : 11.80
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
 ALDA / ADA hPa : -
 Rated speed rpm : 1800
 Del. quantity
 cm3/1000 strokes : 40.6
 Tolerance
 cm3/1000 strokes : ± 0.8
 Check tolerance
 cm3/1000S. : ± 1.8
 Spreed
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 3.0

Ref. pressure
 ALDA / ADA hPa : -
 Rated speed rpm : 2000
 Spreed
 Del. quantity
 cm3/1000 strokes : 40.7
 Tolerance
 cm3/1000 strokes : ± 1.0
 Check tolerance
 cm3/1000S. : ± 2.0
 Spreed
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 3.0

HIGH IDLE

Ref. pressure
 ALDA / ADA hPa : -
 Rated speed rpm : 2250
 rack travel mm : 7.70
 Tolerance mm : ± 0.25
 Del. quantity
 cm3/1000 strokes : 25.1
 Tolerance
 cm3/1000 strokes : ± 2.0
 Check tolerance
 cm3/1000S. : ± 3.0
 Spreed
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 21.60
 Tolerance mm : ± 1.50
 Del. quantity
 cm3/1000 strokes : 59.0

Tolerance
 cm3/1000 strokes : ± 4.0
 Check tolerance
 cm3/1000S. : ± 5.0
 Spreed
 Tolerance
 cm3/1000 strokes : 6.0
 Check tolerance
 cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 385
 Del. quantity
 cm3/1000 strokes : 9.3
 Check tolerance
 cm3/1000S. : ± 2.3
 Spreed
 Check tolerance
 cm3/1000S. : 1.5

control lever
 position degree : > 47.00

control lever
 position degree : < 44.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
 position degree : 14.0
 tolerance degree : ± 2.0

Rated speed rpm : 400

Rack travel in mm : 8.50
 Tolerance mm : ± 0.80
 Del. quantity
 cm3/1000 strokes : 21.0
 Tolerance
 cm3/1000 strokes : ± 3.5
 Check tolerance
 cm3/1000S. : ± 4.5
 Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 385
Vacuum hPa : -450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.09.98
Test oil : ISO 4113
Combination No. : 0 401 846 891
Injection pump
Pump designation : PE6P120A720RS3216
EP type number : 0 411 826 781
Governor
Governor design. : RQV300...975PA898K
Governor no. : 0 421 815 197

Cust. part No. :

Customer-spec. information
Customer : IVECO-UNIC
Motor : 8210.42.269
Power KW : 261.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 2 417 413 046
Inlet press. bar : 2.0
Test nozzle holde
assembly : 1 688 901 019
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 3.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 975
Rack travel in mm : 12.85
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 236.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.50
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 20.0

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 6.0

Spread
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 975
guide sleeve
travel mm : 9.70
Tolerance mm : \pm 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 1.80
Tolerance mm : \pm 0.20

Rated speed rpm : 400
guide sleeve
travel mm : 3.60
Tolerance mm : \pm 0.40

Rated speed rpm : 750
guide sleeve
travel mm : 6.90
Tolerance mm : \pm 0.20

Rated speed rpm : 1200
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1015

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975
Aneroid pressure
hPa : 1200

Del. quantity
cm3/1000 strokes : 236.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spread
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.80
Rated speed rpm : 1020
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1100
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 6.00

Testing:

Rated speed rpm : 300
rack travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 975
rack travel mm : 12.85
Tolerance mm : \pm 0.05

Rated speed rpm : 830
rack travel mm : 12.50
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.40
Tolerance mm : \pm 0.10

Rated speed rpm : 350
rack travel mm : 11.35
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 975
Pressure hPa : 1200
rack travel mm : 12.85
Tolerance mm : \pm 0.05

Rated speed rpm : 975
Pressure hPa : -
rack travel mm : 9.70
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 975

Pressure hPa : 400
rack travel mm : 10.20
Tolerance mm : \pm 0.10

Pressure hPa : 600
rack travel mm : 11.45
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 240

Check
speed 1/min : > 80
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 191.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

rack travel mm : 11.40
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.09.98
Test oil : ISO 4113

Combination No. : 0 402 670 814

Injection pump
Pump designation : PE12P120A320LS7925
EP type number : 0 412 620 852

Governor
Governor design. : RSV375...950POA692
Governor no. : 0 421 833 614

Cust. part No. : 0 270 740 702

Customer-spec. information
Customer : MB-NFZ
Motor : OM 444 LA
Power KW : 493.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6- 7

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 930

Rack travel in mm : 13.50
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 228.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 375

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 930

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 228.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 91.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 978
rack travel mm : 12.50

Rated speed rpm : 1048
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

Rated speed rpm : 979
rack travel mm : 12.50

Rated speed rpm : 1049
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

Rated speed rpm : 980
rack travel mm : 12.50

Rated speed rpm : 1050
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

Rated speed rpm : 981
rack travel mm : 12.50

Rated speed rpm : 1051
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

Rated speed rpm : 982
rack travel mm : 12.50

Rated speed rpm : 1052
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

rack travel mm : 12.50

rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 8.50

Testing:

Rated speed rpm : 375
rack travel mm : 5.00
Tolerance mm : \pm 0.10

SET IDLE AUXILIARY SPRING

Rated speed rpm : 410
rack travel mm : 2.00

B10

TORQUE CONTROL

Rated speed rpm : 930
rack travel mm : 13.50
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 13.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.50
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.90
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 700
rack travel mm : 11.70
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 9.60
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 242.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 375
Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.09.98
Test oil : ISO 4113

Combination No. : 0 402 716 805

Injection pump
Pump designation : PES6P120A700LS7442
EP type number : 0 412 726 972

Governor
Governor design. :
Governor no. :

Cust. part No. : 0280743902

Customer-spec. information
Customer : MTU
Motor : 6R183-02
Power KW : 369.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Overflow quantity
min. l/h : 240
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.35
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 7.80
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	:	184.0
Tolerance cm ³ /1000 strokes	:	± 1.0
Check tolerance cm ³ /1000S.	:	± 4.0
Spreed		
Tolerance cm ³ /1000 strokes	:	5.0
Check tolerance cm ³ /1000S.	:	9.0

Rated speed rpm	:	300
Rack travel in mm	:	4.10
Tolerance mm	:	± 0.20
Del. quantity cm ³ /1000 strokes	:	18.0
Tolerance cm ³ /1000 strokes	:	± 3.0
Check tolerance cm ³ /1000S.	:	± 6.0
Spreed		
Tolerance cm ³ /1000 strokes	:	8.0
Check tolerance cm ³ /1000S.	:	12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	750
Aneroid pressure hPa	:	-
Del. quantity cm ³ /1000 strokes	:	184.0
Tolerance cm ³ /1000 strokes	:	± 1.0
Check tolerance cm ³ /1000S.	:	± 4.0
Spreed		
Tolerance cm ³ /1000 strokes	:	5.0
Check tolerance cm ³ /1000S.	:	9.0

LOW IDLE

Testing:

Rated speed rpm	:	300
rack travel mm	:	4.10
Tolerance mm	:	± 0.20

TORQUE CONTROL

Rated speed rpm	:	750
rack travel mm	:	7.80
Tolerance mm	:	± 0.05

LOW IDLE

Rated speed rpm	:	300
Rack travel in mm	:	4.10
Tolerance mm	:	± 0.20
Del. quantity cm ³ /1000 strokes	:	18.0
Tolerance cm ³ /1000 strokes	:	± 3.0
Check tolerance cm ³ /1000S.	:	± 6.0
Spreed		
Tolerance cm ³ /1000 strokes	:	8.0
Check tolerance cm ³ /1000S.	:	12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.06.94
Test oil : ISO 4113

Combination No. : 0 400 074 883

Injection pump
Pump designation : PES4M60C32ORS185
EP type number : 0 410 064 006

Governor
Governor design. : RSF375/1900M78
Governor no. : 0 420 021 274

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601 D23 LA
Power KW : 72.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

B14

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 0.20

Prestroke mm : ± 0.30
Check
tolerance mm : 12

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.10.98
Test oil : ISO 4113

Combination No. : 0 400 816 002

Injection pump
Pump designation : PES6A90D400RS2821
EP type number : 0 410 896 092

Governor
Governor design. :
Governor no. :

Cust. part No. : 112122

Customer-spec. information

Customer : IVECO-AIFO
Motor : 8061 SRM 25

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

B15

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm : 10.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 58.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Spread

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 2.5
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 7.0

TORQUE CONTROL

Rated speed rpm : 1500
rack travel mm : 10.05
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.20
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.10.98
Test oil : ISO 4113

Combination No. : 0 400 836 036

Injection pump
Pump designation : PES6A85D410/3RS2761
EP type number : 0 410 886 895

Governor
Governor design. : RQV300...1250AB1188
: -1L
Governor no. : 0 420 212 205

Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : BF6L913
Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 88.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 300

Rack travel in mm : 7.80

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 13.0

Tolerance

cm³/1000 strokes : ± 2.0

Check tolerance

cm³/1000S. : ± 4.0

Speed

Tolerance

cm³/1000 strokes : 4.5

Check tolerance

cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1303

guide sleeve

travel mm : 8.86

Tolerance mm : ± 0.15

Rated speed rpm : 300

guide sleeve

travel mm : 1.29

Tolerance mm : ± 0.20

Rated speed rpm : 850

guide sleeve

travel mm : 4.97

Tolerance mm : ± 0.25

Rated speed rpm : 1520

guide sleeve

travel mm : 11.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1344

Rack travel in mm : 11.35

Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure

hPa : 700

Del. quantity

cm³/1000 strokes : 88.0

Tolerance

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 2.5

Speed

Tolerance

cm³/1000 strokes : 3.0

Check tolerance

cm³/1000S. : 7.0

CONTROL LEVER

control lever

position degree : 122.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.30

Rated speed rpm : 1295

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1385

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1500

LOW IDLE

control lever

position degree : 69.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.89

Testing:

Rated speed rpm : 300
rack travel mm : 7.80
Tolerance mm : \pm 0.10

Rated speed rpm : 405

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 13.15
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.90
Tolerance mm : \pm 0.10

Rated speed rpm : 820
rack travel mm : 12.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.35
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 11.70
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 700
Rated speed rpm : 750
rack travel mm : 12.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 89.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 63.0
Tolerance
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 2.5

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
rack travel mm : 17.20
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 7.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 402 746 617

Injection pump
Pump designation : PES6P120A720RS7423
EP type number : 0 412 726 963

Governor
Governor design. : RQV325...975PA909
: -12K
Governor no. : 0 421 815 531

Cust. part No. : 313GC5229-P10

Customer-spec. information
Customer : MACK
Motor : EN7300A
Power KW : 223.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 975

Rack travel in mm : 12.55
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 202.0

Tolerance
cm3/1000 strokes : - 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 5.30

Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 44.0

Tolerance

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1000S. : + 5.0

Spread

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1030

guide sleeve

travel mm : 8.84

Tolerance mm : + 0.15

Rated speed rpm : 325

guide sleeve

travel mm : 1.27

Tolerance mm : + 0.20

Rated speed rpm : 524

guide sleeve

travel mm : 3.30

Tolerance mm : + 0.25

Rated speed rpm : 390

guide sleeve

travel mm : 2.30

Tolerance mm : + 0.25

Rated speed rpm : 1430
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975

Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 202.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000S. : + 4.0

Spread

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 106.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.60

Rated speed rpm : 1020

Tolerance 1/min : + 5

Check

speed 1/min : + 10

rack travel mm : 4.00

Rated speed rpm : 1175

Tolerance 1/min : + 15

Check

speed 1/min : + 20

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1250

LOW IDLE

control lever

position degree : 61.5

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 275
CRT mm min. : > 6.50

Testing:

Rated speed rpm : 325
rack travel mm : 5.30
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 975
rack travel mm : 12.55
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.50
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 975
Pressure hPa : 1200
rack travel mm : 12.55
Tolerance mm : \pm 0.05

Rated speed rpm : 975
Pressure hPa : -
rack travel mm : 8.10
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 975
Pressure hPa : 460
rack travel mm : 11.15
Tolerance mm : \pm 0.20

Pressure hPa : 235
rack travel mm : 9.25
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 275

Check
speed 1/min : > 80
Check
speed 1/min : < 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 221.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 11.50
Tolerance mm : \pm 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 148.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.80
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 30.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 5.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.06.98
Test oil : ISO 4113

Combination No. : 9 400 030 734CA

Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214

Governor
Governor design. : RSV500...1100AOC847R
Governor no. : 9 420 034 713

Cust. part No. : 3933290

Customer-spec. information

Customer : CDC
Motor : 4BT3.9
Power KW : 74.5

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 093

Inlet press. bar : 2.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.55
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 107.5

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Spreed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 500

Rack travel in mm : 5.55
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 20.5

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spreed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 107.5

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Spreed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

RATED SPEED

rack travel mm : 11.50

Rated speed rpm : 1165

Tolerance 1/min : + 5

rack travel mm : 0.85

Tolerance mm : + 0.55

Rated speed rpm : 1375

rack travel mm : 6.00

Rated speed rpm : 1230

Tolerance 1/min : + 15

LOW IDLE

Control lever difference

Grad : 20.0

tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 500

rack travel mm : 5.05

Tolerance mm : + 0.10

Testing:

Rated speed rpm : 500

rack travel mm : 5.55

Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 1100

rack travel mm : 12.55

Tolerance mm : + 0.05

Rated speed rpm : 750

rack travel mm : 13.50

Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 750
Pressure hPa : 1000

Rated speed rpm : 750
Pressure hPa : -
rack travel mm : 11.90
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 750

Pressure hPa : 440
rack travel mm : 12.40
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 119.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 96.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 500

Rack travel in mm : 5.55
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.10.98
Test oil : ISO 4113
Combination No. : 0 400 075 920
Injection pump
Pump designation : PES5M55C320RS189
EP type number : 0 410 055 953
Governor
Governor design. : RSF385/2000M83
Governor no. : 0 420 021 284

Cust. part No. :

Customer-spec. information
Customer : DPICO
Motor : OM 602 2,9ltr
Power KW : 70.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288
: 0.80
: 1.00

Start of delivery blocking

°NW after s.o.d. : 15.50
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 38.0

Tolerance
cm3/1000 strokes : ± 0.5

Check tolerance
cm3/1000S. : ± 1.5

Spreed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

Rated speed rpm : 385

Rack travel in mm : 5.90
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 9.5

Tolerance
cm³/1000 strokes : ± 0.5

Spread
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25
Tolerance mm : ± 0.15

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure
ALDA / ADA hPa : 1100

Del. quantity
cm³/1000 strokes : 38.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Spread
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2250
rack travel mm : 7.60
Tolerance mm : ± 0.25

Rated speed rpm : 2550
rack travel mm : 0.50

C01

Tolerance mm : ± 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever
position degree : 12.5
tolerance degree : ± 2.0

Setting point w/out bumper spring

Rated speed rpm : 385
rack travel mm : 5.90

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500
rack travel mm : 4.00
Tolerance mm : ± 0.10

Load pick-up

Rated speed rpm : 250
rack travel mm : 13.00

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 5.90
Rated speed rpm : 385

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.15
Tolerance mm : ± 0.05

Rated speed rpm : 2000
rack travel mm : 12.15
Tolerance mm : ± 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 940
rack travel mm : -0.10

Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.40
Tolerance mm : \pm 0.10

Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -1.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2000
Del. quantity
cm³/1000 strokes : 41.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2250
rack travel mm : 7.60
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.60

Tolerance mm : \pm 1.50
Del. quantity
cm³/1000 strokes : 60.3
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 385
rack travel mm : 5.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 10.8
Check tolerance
cm³/1000S. : \pm 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

control lever
position degree : > 47.00

control lever
position degree : < 43.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 12.5
tolerance degree : \pm 2.0

Rated speed rpm : 400

Rack travel in mm : 8.90
Tolerance mm : \pm 0.80
Del. quantity
cm³/1000 strokes : 22.5
Tolerance
cm³/1000 strokes : \pm 3.5
Check tolerance
cm³/1000S. : \pm 4.5

Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 385
Vacuum hPa : -450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.09.98
Test oil : ISO 4113
Combination No. : 0 400 075 920T4
Injection pump
Pump designation : PES5M55C320RS189
EP type number : 0 410 055 953
Governor
Governor design. : RSF385/2000M83
Governor no. : 0 420 021 284

Cust. part No. : A 40007-5920

Customer-spec. information
Customer : DPICO
Motor : OM 602 2,9ltr
Power KW : 70.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

C04

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288
: 0.80
: 1.00

Start of delivery blocking

°NW after s.o.d. : 15.50
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 37.0

Tolerance
cm3/1000 strokes : ± 0.5

Check tolerance
cm3/1000S. : ± 1.5

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

Rated speed rpm : 385

Rack travel in mm : 5.90

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 8.5

Tolerance
cm³/1000 strokes : ± 0.5

Spread
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25
Tolerance mm : ± 0.15

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 1100
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 1.5
Spread
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2250
rack travel mm : 7.60
Tolerance mm : ± 0.25

Rated speed rpm : 2550
rack travel mm : 0.50

Tolerance mm : ± 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever
position degree : 12.5
tolerance degree : ± 2.0

Setting point w/out bumper spring

Rated speed rpm : 385
rack travel mm : 5.90

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500
rack travel mm : 4.00
Tolerance mm : ± 0.10

Load pick-up

Rated speed rpm : 250
rack travel mm : 13.00

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 5.90
Rated speed rpm : 385

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.15
Tolerance mm : ± 0.05

Rated speed rpm : 2000
rack travel mm : 12.15
Tolerance mm : ± 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 940
rack travel mm : -0.10

Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.40
Tolerance mm : \pm 0.10

Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -1.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2000
Del. quantity
cm³/1000 strokes : 41.3
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2250
rack travel mm : 7.60
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 24.1
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.60

Tolerance mm : \pm 1.50
Del. quantity
cm³/1000 strokes : 60.3
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 385
rack travel mm : 5.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 9.8
Check tolerance
cm³/1000S. : \pm 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

control lever
position degree : > 47.00

control lever
position degree : < 43.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 12.5
tolerance degree : \pm 2.0

Rated speed rpm : 400

Rack travel in mm : 8.90
Tolerance mm : \pm 0.80
Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : \pm 3.5
Check tolerance
cm³/1000S. : \pm 4.5

Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 385

Vacuum hPa : -450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.10.98
Test oil : ISO 4113

Combination No. : 0 400 075 921

Injection pump
Pump designation : PES5M55C320RS189
EP type number : 0 410 055 953

Governor
Governor design. : RSF385/2000M81
Governor no. : 0 420 021 282

Cust. part No. :

Customer-spec. information
Customer : DPICO
Motor : OM 602 2,9ltr
Power KW : 70.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

C08

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288
: 0.80
: 1.00

Start of delivery blocking

°NW after s.o.d. : 15.50
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 38.0

Tolerance
cm3/1000 strokes : ± 0.5

Check tolerance
cm3/1000S. : ± 1.5

Speed

Tolerance
cm3/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 3.0

Rated speed rpm : 385

Rack travel in mm : 5.90
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 9.5

Tolerance
cm3/1000 strokes : \pm 0.5

Spreed
Tolerance
cm3/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25
Tolerance mm : \pm 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure
ALDA / ADA hPa : -

Del. quantity
cm3/1000 strokes : 38.0

Tolerance
cm3/1000 strokes : \pm 0.5

Check tolerance
cm3/1000S. : \pm 1.5

Spreed
Tolerance
cm3/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2250
rack travel mm : 7.60
Tolerance mm : \pm 0.25

Rated speed rpm : 2550
rack travel mm : 0.50

Tolerance mm : \pm 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever
position degree : 14.0
tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 385

rack travel mm : 5.90

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500
rack travel mm : 4.00
Tolerance mm : \pm 0.10

Load pick-up

Rated speed rpm : 250
rack travel mm : 12.00

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 5.90
Rated speed rpm : 385

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.15
Tolerance mm : \pm 0.05

Rated speed rpm : 2000
rack travel mm : 12.15
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 2000

Del. quantity
cm3/1000 strokes : 41.5
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 2.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 2250
rack travel mm : 7.60
Tolerance mm : + 0.25
Del. quantity
cm3/1000 strokes : 24.5
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 3.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.60
Tolerance mm : + 1.50
Del. quantity
cm3/1000 strokes : 59.0
Tolerance
cm3/1000 strokes : + 4.0
Check tolerance
cm3/1000S. : + 5.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 385
rack travel mm : 5.90
Del. quantity
cm3/1000 strokes : 10.8

Check tolerance
cm3/1000S. : + 2.3
Spreed
Check tolerance
cm3/1000S. : 1.5

control lever
position degree : > 47.00

control lever
position degree : < 44.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 14.0
tolerance degree : + 2.0

Rated speed rpm : 400

Rack travel in mm : 8.90
Tolerance mm : + 0.80

Del. quantity
cm3/1000 strokes : 22.5

Tolerance
cm3/1000 strokes : + 3.5

Check tolerance
cm3/1000S. : + 4.5

Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 385
Vacuum hPa : -450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.09.98
Test oil : ISO 4113
Combination No. : 0 400 075 921T4
Injection pump
Pump designation : PES5M55C320RS189
EP type number : 0 410 055 953
Governor
Governor design. : RSF385/2000M81
Governor no. : 0 420 021 282

Cust. part No. : A 40007-5921

Customer-spec. information
Customer : DPICO
Motor : OM 602 2,9ltr
Power KW : 70.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288
: 0.80
: 1.00

Start of delivery blocking

°NW after s.o.d. : 15.50
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 37.0

Tolerance
cm3/1000 strokes : ± 0.5

Check tolerance
cm3/1000S. : ± 1.5

Spreed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

Rated speed rpm : 385

Rack travel in mm : 5.90
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 8.5

Tolerance
cm³/1000 strokes : ± 0.5

Speed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25
Tolerance mm : ± 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure
ALDA / ADA hPa : -

Del. quantity
cm³/1000 strokes : 37.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2250
rack travel mm : 7.60
Tolerance mm : ± 0.25

Rated speed rpm : 2550
rack travel mm : 0.50

Tolerance mm : ± 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever
position degree : 14.0
tolerance degree : ± 2.0

Setting point w/out bumper spring

Rated speed rpm : 385

rack travel mm : 5.90

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500
rack travel mm : 4.00
Tolerance mm : ± 0.10

Load pick-up

Rated speed rpm : 250
rack travel mm : 12.00

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 5.90
Rated speed rpm : 385

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.15
Tolerance mm : ± 0.05

Rated speed rpm : 2000
rack travel mm : 12.15
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 2000

Del. quantity
cm3/1000 strokes : 41.3
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 2.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 2250
rack travel mm : 7.60
Tolerance mm : + 0.25
Del. quantity
cm3/1000 strokes : 24.1
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 3.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.60
Tolerance mm : + 1.50
Del. quantity
cm3/1000 strokes : 59.0
Tolerance
cm3/1000 strokes : + 4.0
Check tolerance
cm3/1000S. : + 5.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 385
rack travel mm : 5.90
Del. quantity
cm3/1000 strokes : 9.8

Check tolerance
cm3/1000S. : + 2.3
Spreed
Check tolerance
cm3/1000S. : 1.5

control lever
position degree : > 47.00

control lever
position degree : < 44.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 14.0
tolerance degree : + 2.0

Rated speed rpm : 400

Rack travel in mm : 8.90
Tolerance mm : + 0.80
Del. quantity
cm3/1000 strokes : 21.5
Tolerance
cm3/1000 strokes : + 3.5
Check tolerance
cm3/1000S. : + 4.5
Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 385
Vacuum hPa : -450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.06.93
Test oil : ISO 4113

Combination No. : 0 401 840 764

Injection pump
Pump designation : PE12P110A920LS3173
EP type number : 0 411 810 708

Governor
Governor design. : RQV300...1150PA820
: -1
Governor no. : 0 421 813 727

Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : BF12L513
Power KW : 353.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1;4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 4- 9- 8- 5- 2
: - 11- 10- 3- 6
: - 7- 12

Phasing : 0-15-60-75-120-135
: -180-195-240-255
: -300-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 11.70
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 143.0

Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Spread	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 8.0

Rated speed rpm : 300

Rack travel in mm : 6.70
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 17.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 5.5

Spread
Tolerance
cm3/1000 strokes : 7.0
Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1190

Rack travel in mm : 16.50
Tolerance mm : + 1.30

CONTROL LEVER

control lever
position degree : 58.0
tolerance degree : + 4.0

control lever
position degree : 123.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 10.70
Rated speed rpm : 1195
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1305
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 89.0
tolerance degree : + 4.0

control lever
position degree : 24.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : > 8.30

Testing:

Rated speed rpm : 300
rack travel mm : 6.70
Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 11.70
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 750
rack travel mm : 11.70
Tolerance mm : + 0.10

Rated speed rpm : 500
Pressure hPa : -

rack travel mm : 10.50
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 420
rack travel mm : 10.80
Tolerance mm : \pm 0.10

Pressure hPa : 480
rack travel mm : 11.40
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : < 100
Rated speed rpm : > 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.70

C16

Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.12.86
Test oil : ISO 4113
Combination No. : 0 401 846 525
Injection pump
Pump designation : PE6P120A320RS438-1
EP type number : 0 411 826 133

Governor
Governor design. : RQV275...1200PA648
: -3
Governor no. : 0 421 813 535

Cust. part No. :

Customer-spec. information
Customer : RVI
Motor : MIDS062030
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

BASIC SETTING

Del. quantity
cm³/1000 strokes : 134.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -4.90

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1200
guide sleeve
travel mm : 8.50
Tolerance mm : + 0.10

Rated speed rpm : 275
guide sleeve
travel mm : 1.30
Tolerance mm : + 0.10

Rated speed rpm : 400
guide sleeve
travel mm : 3.65
Tolerance mm : + 0.15

Rated speed rpm : 850
guide sleeve
travel mm : 6.25
Tolerance mm : + 0.15

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1210

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 134.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1260
Tolerance 1/min : + 5

rack travel mm : -7.20
Rated speed rpm : 1375
Tolerance 1/min : + 15

rack travel mm : -0.50
Tolerance mm : + 10.70
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 69.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

Testing:

Rated speed rpm : 275
rack travel mm : -4.90
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm max. : $<$ -1.90

Rated speed rpm : 318

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 195

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 119.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : -4.90

Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.07.96

Test oil : ISO 4113

Combination No. : 0 401 846 571

Injection pump

Pump designation : PE6P110A32ORS856

EP type number : 0 411 816 170

Governor

Governer design. : RQV250...1150PA1313

Governer no. : 0 421 814 183

Cust. part No. : 836354722

Customer-spec. information

Customer : SISU

Motor : 612 DSI

Power kW : 185.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holde assembly

: 0 681 343 009

Opening pressure

bar : 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.05

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.05

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 140.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

Rated speed rpm : 325

Rack travel in mm : 6.20

Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 14.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spreed

Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1207
guide sleeve
travel mm : 8.36
Tolerance mm : + 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 2.03
Tolerance mm : + 0.20

Rated speed rpm : 800
guide sleeve
travel mm : 5.24
Tolerance mm : + 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 3.08
Tolerance mm : + 0.25

Rated speed rpm : 1490
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1312

Rack travel in mm : 11.05
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 700
Del. quantity
cm3/1000 strokes : 140.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Spreed
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 52.0
tolerance degree : + 4.0

control lever
position degree : 115.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.00
Rated speed rpm : 1195
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1295
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 87.0
tolerance degree : \pm 4.0

control lever
position degree : 20.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : $>$ 7.70

Testing:

Rated speed rpm : 325
rack travel mm : 6.20
Tolerance mm : \pm 0.10

Rated speed rpm : 413

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.05
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.05
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.40
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 270
rack travel mm : 10.80
Tolerance mm : \pm 0.10

Pressure hPa : 415
rack travel mm : 11.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 104.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 6.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.02.98
Test oil : ISO 4113

Combination No. : 0 401 846 882

Injection pump
Pump designation : PE6P120A320RS3206-1
EP type number : 0 411 826 775

Governor
Governor design. : RQ750PA783-1
Governor no. : 0 421 801 432

Cust. part No. : 863232 P05 V. 06/96

Customer-spec. information
Customer : VOLVO-PENTA
Motor : TWD 1211 G
Power KW : 288.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0

Overflow quantity
min. l/h : 215
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.80
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 345.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 757
guide sleeve
travel mm : 4.06
Tolerance mm : \pm 0.25

Rated speed rpm : 510
guide sleeve
travel mm : -8.33
Tolerance mm : \pm 0.25

Rated speed rpm : 860
guide sleeve
travel mm : 16.96
Tolerance mm : \pm 0.25

Rated speed rpm : 814

guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 870
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 345.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 88.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.80
Rated speed rpm : 751
Tolerance 1/min : \pm 3

rack travel mm : 4.00
Rated speed rpm : 791
Tolerance 1/min : \pm 8

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 748
rack travel mm : 12.80

Rated speed rpm : 789
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 749
rack travel mm : 12.80

Rated speed rpm : 790
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 750
rack travel mm : 12.80

Rated speed rpm : 791
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 12.80

Rated speed rpm : 792
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 12.80

Rated speed rpm : 793
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 12.80

Rated speed rpm : 794
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.80
Tolerance mm : \pm 0.05

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.01.96
Test oil : ISO 4113

Combination No. : 0 401 846 882D

Injection pump
Pump designation : PE6P120A32ORS3206-1
EP type number : 0 411 826 775

Governor
Governor design. : RQ750PA783-1
Governor no. : 0 421 801 432

Cust. part No. : 865037 P03 V. 02/95

Customer-spec. information
Customer : PENTA
Motor : TAMD 122

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 345.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance cm3/1000S.	: +- 4.0
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Speed

Tolerance cm3/1000 strokes	: 5.0
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Check tolerance cm3/1000S.	: 9.0
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Rated speed rpm	: 300
Del. quantity cm3/1000 strokes	: 20.0
Tolerance cm3/1000 strokes	: +- 3.0
Check tolerance cm3/1000S.	: +- 6.0
Speed	
Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000S.	: 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 759
guide sleeve travel mm	: 6.78
Tolerance mm	: +- 0.15

Rated speed rpm	: 510
guide sleeve travel mm	: -6.60
Tolerance mm	: +- 0.25

Rated speed rpm	: 840
guide sleeve travel mm	: 16.84
Tolerance mm	: +- 0.25

Rated speed rpm	: 790
guide sleeve travel mm	: 10.00
Tolerance mm	: +- 0.25

Rated speed rpm	: 850
guide sleeve travel mm	: 11.50
Tolerance mm	: +- 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure hPa	: -
Del. quantity cm3/1000 strokes	: 345.0
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000S.	: +- 4.0
Speed	
Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 94.0
tolerance degree	: +- 4.0

RATED SPEED	
rack travel mm	: 12.80
Rated speed rpm	: 825
Tolerance 1/min	: +- 3

rack travel mm	: 4.00
Rated speed rpm	: 885
Tolerance 1/min	: +- 15

rack travel mm	: 0.50
Tolerance mm	: +- 0.50
Rated speed rpm	: 950

ASSEMBLY GOVERNOR SETTING

Rated speed rpm	: 822
rack travel mm	: 12.80

Rated speed rpm	: 880
Tolerance 1/min	: +- 5
rack travel mm	: 4.00

rack travel mm	: 0.50
Tolerance mm	: +- 0.50
Rated speed rpm	: 950

Rated speed rpm	: 823
rack travel mm	: 12.80

Rated speed rpm	: 881
Tolerance 1/min	: +- 5
rack travel mm	: 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 950

Rated speed rpm : 824
rack travel mm : 12.80

Rated speed rpm : 882
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 950

Rated speed rpm : 825
rack travel mm : 12.80

Rated speed rpm : 883
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 950

Rated speed rpm : 826
rack travel mm : 12.80

Rated speed rpm : 884
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 950

Rated speed rpm : 827
rack travel mm : 12.80

Rated speed rpm : 885
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 950

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.80
Tolerance mm : \pm 0.05

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 28.09.95
Test oil : ISO 4113

Combination No. : 0 401 846 968

Injection pump
Pump designation : PE6P110A32ORS3197
EP type number : 0 411 816 752

Governor
Governor design. : RQV300...1100PA589
: -4
Governor no. : 0 421 814 022

Cust. part No. : 11031149
: -P02 v100593

Customer-spec. information
Customer : VME
Motor : TD102 KF
Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 170.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 300

Rack travel in mm : 4.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 27.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1176
guide sleeve
travel mm : 8.34
Tolerance mm : ± 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 1.76
Tolerance mm : ± 0.25

Rated speed rpm : 1087
guide sleeve
travel mm : 6.96
Tolerance mm : ± 0.25

Rated speed rpm : 387
guide sleeve
travel mm : 2.96
Tolerance mm : ± 0.25

Rated speed rpm : 437

guide sleeve
travel mm : 3.71
Tolerance mm : ± 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 4.67
Tolerance mm : ± 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1180

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 63.0
tolerance degree : ± 4.0

control lever
position degree : 120.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.90
Rated speed rpm : 1165
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1240
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 64.0
tolerance degree : \pm 4.0

control lever
position degree : 9.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 5.90

Testing:

Rated speed rpm : 300
rack travel mm : 4.40
Tolerance mm : \pm 0.10

Rated speed rpm : 315

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.95
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.95
Tolerance mm : \pm 0.15

MEASUREMENT

D03

Rated speed rpm : 500

Pressure hPa : 440
rack travel mm : 1.60
Tolerance mm : \pm 0.10

Pressure hPa : 200
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 128.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 27.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.98
Test oil : ISO 4113

Combination No. : 0 401 846 996

Injection pump
Pump designation : PE6P120A320RS3405
EP type number : 0 411 826 822

Governor
Governor design. : RQ750PA783-1
Governor no. : 0 421 801 432

Cust. part No. : 3828439 P01 v.05.98

Customer-spec. information
Customer : PENTA
Motor : TWD 1211 G
Power KW : 286.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0

Overflow quantity
min. l/h : 215
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.50
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 306.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 758
guide sleeve
travel mm : 3.85
Tolerance mm : \pm 0.15

Rated speed rpm : 510
guide sleeve
travel mm : -8.48
Tolerance mm : \pm 0.25

Rated speed rpm : 860
guide sleeve
travel mm : 16.67
Tolerance mm : \pm 0.25

Rated speed rpm : 816

guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 870
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 306.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 86.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 748
rack travel mm : 11.50

Rated speed rpm : 789
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 749
rack travel mm : 11.50

Rated speed rpm : 790
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 750
rack travel mm : 11.50

Rated speed rpm : 791
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 11.50

Rated speed rpm : 792
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 11.50

Rated speed rpm : 793
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 11.50

Rated speed rpm : 794
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.50
Tolerance mm : \pm 0.05

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.01.98

Test oil : ISO 4113

Combination No. : 0 401 876 780

Injection pump

Pump designation : PE6P120A320RS3206-1

EP type number : 0 411 826 775

Governor

Governer design. : RSV250...900P4A550

Governer no. : 0 421 833 354

Cust. part No. : 864410-P05 v. 06/96

Customer-spec. information

Customer : PENTA

Motor : TID121LP

Power KW : 295.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 110

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.55

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.25

Tolerance mm : ± 0.05

Del. quantity cm3/1000 strokes	: 299.0
Tolerance cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 4.0
Spreed	
Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000S.	: 9.0

Rated speed rpm	: 300
Rack travel in mm	: 4.80
Tolerance mm	: ± 0.10
Del. quantity cm3/1000 strokes	: 23.0
Tolerance cm3/1000 strokes	: ± 3.0
Check tolerance cm3/1000S.	: ± 6.0
Spreed	
Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000S.	: 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
governor spring pre-tension click setting x	: 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
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Aneroid pressure hPa	: -
Del. quantity cm3/1000 strokes	: 299.0
Tolerance cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 4.0
Spreed	
Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 57.0
tolerance degree	: ± 4.0

control lever position degree	: 107.0
tolerance degree	: ± 4.0

RATED SPEED	
rack travel mm	: 11.25
Rated speed rpm	: 950
Tolerance 1/min	: ± 5

rack travel mm	: 4.00
Rated speed rpm	: 1000
Tolerance 1/min	: ± 15

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1150

LOW IDLE

control lever position degree	: 74.0
tolerance degree	: ± 4.0

control lever position degree	: 24.0
tolerance degree	: ± 4.0

Setting point w/out bumper spring

Rated speed rpm	: 300
rack travel mm	: 4.30
Tolerance mm	: ± 0.10

Testing:

Rated speed rpm : 300
rack travel mm : 4.80
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 370
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.25
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 280.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.11.93
Test oil : ISO 4113

Combination No. : 0 401 876 799

Injection pump
Pump designation : PE6P120A320RS3206-4
EP type number : 0 411 826 810

Governor
Governor design. : RSV250...900P4A550
Governor no. : 0 421 833 354

Cust. part No. : 11031815-P02

Customer-spec. information
Customer : VME
Motor : TD 121 G

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Del. quantity
cm³/1000 strokes : 246.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rack travel in mm : 5.10
Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 5.00

CONTROL LEVER

control lever
position degree : 63.0
tolerance degree : ± 4.0

control lever
position degree : 113.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 10.35
Rated speed rpm : 950
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1000
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 79.0
tolerance degree : ± 4.0

control lever
position degree : 29.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 4.60
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 300
rack travel mm : 5.10
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 370
Tolerance 1/min : ± 30

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 280.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rack travel in mm : 5.10
Tolerance mm : ± 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.02.98

Test oil : ISO 4113

Combination No. : 0 401 876 802

Injection pump

Pump designation : PE6P120A32ORS3206-1

EP type number : 0 411 826 775

Governor

Governer design. : RSV250...900P4A550

: -1

Governer no. : 0 421 833 427

Cust. part No. : 866383-P06 V. 06.96

Customer-spec. information

Customer : PENTA

Motor : TWD1210P

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. L/h : 160

Tolerance L/h : ± 20.0

Test nozzle holde assembly

: 1 688 901 019

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.50

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 11.30

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.35
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 61.0
tolerance degree : \pm 4.0

control lever
position degree : 111.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.35
Rated speed rpm : 930
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 970
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

control lever
position degree : 30.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 300
rack travel mm : 5.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 370
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.35
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm3/1000 strokes : 292.0
Tolerance
cm3/1000 strokes : \pm 15.0
Check tolerance
cm3/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 23.0
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0
Speed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.06.93
Test oil : ISO 4113

Combination No. : 0 402 046 784

Injection pump
Pump designation : PES6P120A320RS3139
EP type number : 0 412 026 718

Governor
Governor design. : RQV275...1000PA728
: -2
Governor no. : 0 421 813 599

Cust. part No. : CCEP 5047C

Customer-spec. information

Customer : RVI
Motor : MIDR 062045 E
Power KW : 236.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.70

Start of delivery mark

°NW after s.o.d. : 9.00

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 0.50

CRT ZERO POSITION

Rack travel in mm : 11.25

Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 1000

Del. quantity
cm³/1000 strokes : 161.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -5.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 34.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1000

guide sleeve
travel mm : 7.10
Tolerance mm : \pm 0.10

Rated speed rpm : 250

guide sleeve
travel mm : 1.00
Tolerance mm : \pm 0.10

Rated speed rpm : 800

guide sleeve

travel mm : 5.80

Tolerance mm : \pm 0.20

Rated speed rpm : 450

guide sleeve

travel mm : 3.50

Tolerance mm : \pm 0.20

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1250

Rack travel in mm : 11.20

Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure

hPa : 1000

Del. quantity
cm³/1000 strokes : 161.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 119.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00

Rated speed rpm : 1070

Tolerance 1/min : \pm 5

rack travel mm : -7.20

Rated speed rpm : 1195

Tolerance 1/min : \pm 15

rack travel mm : -10.75

Tolerance mm : \pm 0.55

Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -5.70
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm max. : $<$ -4.00
Rated speed rpm : 275

TORQUE CONTROL

Rated speed rpm : 1000
Rated speed rpm : 600
Rated speed rpm : 500
rack travel mm : -2.80
Tolerance mm : \pm 0.25

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1000
Rated speed rpm : 1000
Pressure hPa : -
rack travel mm : -2.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1000
Pressure hPa : 320
rack travel mm : -0.70
Tolerance mm : \pm 0.10
Pressure hPa : 160
rack travel mm : -2.05
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 195

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 185.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
rack travel mm : -2.80
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 110.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 113.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : -5.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 34.5
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.09.98
Test oil : ISO 4113

Combination No. : 0 402 610 806

Injection pump
Pump designation : PE12P120A500LS7933
EP type number : 0 412 620 853

Governor
Governor design. :
Governor no. :

Cust. part No. : 51.11103-7456

Customer-spec. information
Customer : MAN
Motor : D2842 LE ***
Power KW : 653.0

TEST BENCH REQUIREMENTS

Inlet line : 1.1;2.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 165
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 207.0
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 590

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 12-1A-5-9A-8-3A-4
: -11A-10-2A-6

Phasing : 0-45-60-105-120-165
: -180-225-240-285
: -300-345
Tolerance : ± 0.50

Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.60

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 340.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 7.00

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 115.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 340.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Testing:

Rated speed rpm : 300

rack travel mm : 7.00

Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 12.60

Tolerance mm : \pm 0.05

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 7.00

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 115.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.09.96

Test oil : ISO 4113

Combination No. : 0 402 646 655

Injection pump

Pump designation : PE6P120A320RS7361

EP type number : 0 412 626 939

Governor

Governer design. : RQV275...1150PA1192K

Governer no. : 0 421 815 452

Cust. part No. : 1304201/0

Customer-spec. information

Customer : DAF

Motor : RS/GS 245 M

Power KW : 245.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 140

Tolerance l/h : ± 10.0

Test nozzle holde assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1130

Rack travel in mm : 14.65

Tolerance mm : ± 0.05

Del. quantity	
cm3/1000 strokes	: 239.0
Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Spreed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0

Rated speed rpm	: 275
Rack travel in mm	: 5.70
Tolerance mm	: + 0.10
Del. quantity	
cm3/1000 strokes	: 13.0
Tolerance	
cm3/1000 strokes	: + 3.0
Check tolerance	
cm3/1000S.	: + 6.0
Spreed	
Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance	
cm3/1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1223
guide sleeve	
travel mm	: 10.29
Tolerance mm	: + 0.15
Rated speed rpm	: 275
guide sleeve	
travel mm	: 1.56
Tolerance mm	: + 0.20
Rated speed rpm	: 822
guide sleeve	
travel mm	: 6.85
Tolerance mm	: + 0.25
Rated speed rpm	: 300

guide sleeve	
travel mm	: 2.13
Tolerance mm	: + 0.25
Rated speed rpm	: 350
guide sleeve	
travel mm	: 2.97
Tolerance mm	: + 0.25
Rated speed rpm	: 460
guide sleeve	
travel mm	: 3.90
Tolerance mm	: + 0.25
Rated speed rpm	: 1480
guide sleeve	
travel mm	: 13.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1275
Rack travel in mm	: 13.50
Tolerance mm	: + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1130
Aneroid pressure	
hPa	: 1500
Del. quantity	
cm3/1000 strokes	: 239.0
Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Spreed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0

CONTROL LEVER

control lever	
position degree	: 120.0
tolerance degree	: + 4.0

RATED SPEED	
rack travel mm	: 13.65
Rated speed rpm	: 1207
Tolerance 1/min	: + 5

Check
 speed 1/min : + 10

 rack travel mm : 4.00
 Rated speed rpm : 1340
 Tolerance 1/min : + 15
 Check
 speed 1/min : + 20

 rack travel mm : 0.70
 Tolerance mm : + 0.70
 Rated speed rpm : 1450

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

 CRT mm min. : > 8.00

Testing:

Rated speed rpm : 275
 rack travel mm : 5.70
 Tolerance mm : + 0.10

 Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1130
 rack travel mm : 14.65
 Tolerance mm : + 0.05

Rated speed rpm : 1150
 rack travel mm : 14.65
 Tolerance mm : + 0.10

Rated speed rpm : 1025
 rack travel mm : 14.20
 Tolerance mm : + 0.10

Rated speed rpm : 850
 rack travel mm : 14.20
 Tolerance mm : + 0.05

Rated speed rpm : 650
 rack travel mm : 13.10
 Tolerance mm : + 0.10

Rated speed rpm : 500

rack travel mm : 12.30
 Tolerance mm : + 0.20

Rated speed rpm : 600
 rack travel mm : 9.20
 Tolerance mm : + 0.15

Rated speed rpm : 1150
 rack travel mm : 14.95
 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1130
 Pressure hPa : 1500
 rack travel mm : 14.65
 Tolerance mm : + 0.05

Rated speed rpm : 1130
 Pressure hPa : -
 rack travel mm : 9.10
 Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1130

 Pressure hPa : 740
 rack travel mm : 13.05
 Tolerance mm : + 0.05

Pressure hPa : 320
 rack travel mm : 10.00
 Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1500
 Rated speed rpm : 1025
 rack travel mm : 14.20
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 235.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0

Aneroid pressure
 hPa : 1500

Rated speed rpm : 850
Del. quantity
cm3/1000 strokes : 256.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 5.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 650
Del. quantity
cm3/1000 strokes : 250.0
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 154.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : 5.70
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 13.0
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.10.98

Test oil : ISO 4113

Combination No. : 0 402 670 814

Injection pump

Pump designation : PE12P120A320LS7925

EP type number : 0 412 620 852

Governor

Governer design. : RSV375...950POA692

Governer no. : 0 421 833 614

Cust. part No. : 0 270 740 702

Customer-spec. information

Customer : MB-NFZ

Motor : OM 444 LA

Power KW : 493.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 160

Tolerance l/h : ± 20.0

Test nozzle holde assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 12- 1- 5- 9- 8

: - 3- 4- 11- 10

: - 2- 6- 7

Phasing : 0-45-60-105-120

: -165-180-225-240

: -285-300-345

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 930

Rack travel in mm : 13.50
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 228.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 375

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 930

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 228.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 91.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 978
rack travel mm : 12.50

Rated speed rpm : 1048
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

Rated speed rpm : 979
rack travel mm : 12.50

Rated speed rpm : 1049
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

Rated speed rpm : 980
rack travel mm : 12.50

Rated speed rpm : 1050
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

Rated speed rpm : 981
rack travel mm : 12.50

Rated speed rpm : 1051
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

Rated speed rpm : 982
rack travel mm : 12.50

Rated speed rpm : 1052
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

rack travel mm : 12.50

rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 8.50

Testing:

Rated speed rpm : 375
rack travel mm : 5.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 410
Tolerance 1/min : \pm 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 930
rack travel mm : 13.50
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 13.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.50
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.90
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 700
rack travel mm : 11.70
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 9.60
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 242.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 375

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.08.94

Test oil : ISO 4113

Combination No. : 0 402 676 810

Injection pump

Pump designation : PE6P120A320RS7138
: -10

EP type number : 0 412 626 922

Governor

Governer design. : RSV350...1050P1A512
: -3

Governer no. : 0 421 833 334

Cust. part No. : 1309367

Customer-spec. information

Customer : SCANIA

Motor : DS9 60

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holde
assembly

: 1 688 901 019

Opening pressure
bar

: 208.5

Tolerance bar : ± 1.5

E02

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.45

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.70

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Del. quantity

cm³/1000 strokes : 166.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spread

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 4.60
Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 22.0

Tolerance
cm3/1000 strokes : +- 2.0

Check tolerance
cm3/1000S. : +- 4.0

Spread

Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 6.00

CONTROL LEVER

control lever
position degree : 63.0
tolerance degree : +- 4.0

control lever
position degree : 113.0
tolerance degree : +- 4.0

E03

RATED SPEED
rack travel mm : 11.20
Rated speed rpm : 1095
Tolerance 1/min : +- 5
Check
speed 1/min : +- 10

rack travel mm : 4.00
Rated speed rpm : 1155
Tolerance 1/min : +- 15
Check
speed 1/min : +- 20

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 80.0
tolerance degree : +- 4.0

control lever
position degree : 30.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.10
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 475
Tolerance 1/min : +- 30

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 295.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 24.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113

Combination No. : 0 402 736 830

Injection pump
Pump designation : PES6P110A120RS7263
EP type number : 0 412 716 808

Governor
Governor design. : RQV350...1250PA964
: -11K
Governor no. : 0 421 815 321

Cust. part No. : 3281780

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA
Power KW : 154.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 4.40
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

°NW after s.o.d. : 6.50
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.85

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 152.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1316
guide sleeve
travel mm : 8.13
Tolerance mm : \pm 0.25

Rated speed rpm : 350
guide sleeve
travel mm : 1.94
Tolerance mm : \pm 0.25

Rated speed rpm : 826
guide sleeve
travel mm : 4.51
Tolerance mm : \pm 0.25

Rated speed rpm : 353

guide sleeve
travel mm : 1.77
Tolerance mm : \pm 0.25

Rated speed rpm : 403
guide sleeve
travel mm : 2.42
Tolerance mm : \pm 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 2.82
Tolerance mm : \pm 0.25

Rated speed rpm : 1620
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1440

Rack travel in mm : 9.00
Tolerance mm : \pm 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 63.0
tolerance degree : \pm 4.0

control lever
position degree : 121.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.50
Rated speed rpm : 1310
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1450
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

control lever
position degree : 17.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
CRT mm min. : $>$ 6.50

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1250
rack travel mm : 14.50
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 11.65
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 14.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1250
Pressure hPa : -
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1250
Pressure hPa : 570
rack travel mm : 11.30
Tolerance mm : \pm 0.20

Pressure hPa : 775
rack travel mm : 13.15
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 270

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 14.50
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.07.95
Test oil : ISO 4113
Combination No. : 0 402 736 859
Injection pump
Pump designation : PES6P120A120RS7261
EP type number : 0 412 726 876
Governor
Governor design. : RQV350...1100PA924
: -10K
Governor no. : 0 421 815 429
Cust. part No. : 3282465

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAA
Power Kw : 176.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0
Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery blocking
°NW after s.o.d. : 7.00
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 10.85
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 145.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.10

Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 26.0

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 5.0

Spreed

Tolerance
cm3/1000 strokes : 7.0

Check tolerance
cm3/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1400

Rack travel in mm : 9.00
Tolerance mm : \pm 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 900
Del. quantity
cm3/1000 strokes : 145.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0

E10

Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 57.0
tolerance degree : \pm 4.0

control lever
position degree : 113.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.80
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1255
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

control lever
position degree : 17.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 6.60

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.85
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 10.00
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 10.35
Tolerance mm : \pm 0.15

Rated speed rpm : 400
rack travel mm : 9.15
Tolerance mm : \pm 0.15

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 1100
Pressure hPa : 900
rack travel mm : 10.85
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
Pressure hPa : -
rack travel mm : 7.70
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1100
Pressure hPa : 320
rack travel mm : 8.50
Tolerance mm : \pm 0.20

Pressure hPa : 560
rack travel mm : 10.25
Tolerance mm : \pm 0.05

Start interLock

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 10.35
Tolerance mm : \pm 0.15

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.02.95

Test oil : ISO 4113

Combination No. : 0 402 736 863

Injection pump

Pump designation : PES6P120A12ORS7206

EP type number : 0 412 726 835

Governor

Governer design. : RQV350...1100PA924

: -12K

Governer no. : 0 421 815 433

Cust. part No. : 3282473

Customer-spec. information

Customer : CUMMINS

Motor : 6CTAA

Power KW : 202.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 90

Tolerance l/h : ± 5.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0

Tolerance bar : ± 1.0

Prestroke mm : 3.55

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

Start of delivery blocking

°NW after s.o.d. : 7.50

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.23

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.15
Tolerance mm : \pm 0.05

Del. quantity
cm3/1000 strokes : 159.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.30
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 26.0

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 5.0

Spread

Tolerance
cm3/1000 strokes : 7.0

Check tolerance
cm3/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1157
guide sleeve
travel mm : 8.60
Tolerance mm : \pm 0.25

Rated speed rpm : 350
guide sleeve
travel mm : 1.36
Tolerance mm : \pm 0.25

Rated speed rpm : 820
guide sleeve
travel mm : 5.90
Tolerance mm : \pm 0.25

Rated speed rpm : 399
guide sleeve
travel mm : 1.98
Tolerance mm : \pm 0.25

Rated speed rpm : 449
guide sleeve
travel mm : 2.54
Tolerance mm : \pm 0.25

Rated speed rpm : 540
guide sleeve
travel mm : 3.56
Tolerance mm : \pm 0.25

Rated speed rpm : 1550
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1420

Rack travel in mm : 9.00
Tolerance mm : \pm 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 159.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Spread
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : \pm 4.0

control lever
position degree : 117.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.10

Rated speed rpm : 1145

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1275

Tolerance 1/min : \pm 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1350

LOW IDLE

control lever

position degree : 73.0

tolerance degree : \pm 4.0

control lever

position degree : 14.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : $>$ 6.80

Testing:

Rated speed rpm : 350

rack travel mm : 5.30

Tolerance mm : \pm 0.10

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1100

rack travel mm : 12.15

Tolerance mm : \pm 0.05

Rated speed rpm : 600

rack travel mm : 11.20

Tolerance mm : \pm 0.10

Rated speed rpm : 800

rack travel mm : 11.80

Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100

Pressure hPa : 1200

rack travel mm : 12.15

Tolerance mm : \pm 0.05

Rated speed rpm : 1100

Pressure hPa : -

rack travel mm : 8.10

Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 300

rack travel mm : 8.90

Tolerance mm : \pm 0.20

Pressure hPa : 600

rack travel mm : 11.20

Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : $>$ 100

Rated speed rpm : $<$ 270

Check

speed 1/min : $>$ 80

Check

speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200

Rated speed rpm : 600

Del. quantity

cm³/1000 strokes : 177.0

Tolerance

cm³/1000 strokes : \pm 3.0

Check tolerance

cm³/1000S. : \pm 6.0

Speed

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

rack travel mm	:	11.80
Tolerance mm	:	± 0.10

Aneroid pressure

hPa	:	-
Rated speed rpm	:	500
Del. quantity		
cm ³ /1000 strokes	:	107.0
Tolerance		
cm ³ /1000 strokes	:	± 2.0
Check tolerance		
cm ³ /1000S.	:	± 4.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity		
cm ³ /1000 strokes	:	260.0
Tolerance		
cm ³ /1000 strokes	:	± 20.0
Check tolerance		
cm ³ /1000S.	:	± 24.0

LOW IDLE

Rated speed rpm	:	350
Rack travel in mm	:	5.30
Tolerance mm	:	± 0.10
Del. quantity		
cm ³ /1000 strokes	:	26.0
Tolerance		
cm ³ /1000 strokes	:	± 3.0
Check tolerance		
cm ³ /1000S.	:	± 5.0
Speed		
Tolerance		
cm ³ /1000 strokes	:	7.0
Check tolerance		
cm ³ /1000S.	:	11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.09.98
Test oil : ISO 4113

Combination No. : 0 402 744 809

Injection pump
Pump designation : PES4P120A320RS7312
: -1
EP type number : 0 412 724 803

Governor
Governor design. : RQV400...1200PA1397
Governor no. : 0 421 814 212

Cust. part No. : 51.11103-7579

Customer-spec. information

Customer : MAN
Motor : D 0824 LOH 05
Power KW : 114.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 208.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Rated speed rpm : 400

Rack travel in mm : 4.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1261
guide sleeve
travel mm : 10.26
Tolerance mm : \pm 0.15

Rated speed rpm : 400
guide sleeve
travel mm : 2.21
Tolerance mm : \pm 0.20

Rated speed rpm : 822
guide sleeve
travel mm : 5.79
Tolerance mm : \pm 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.53
Tolerance mm : \pm 0.25

Rated speed rpm : 1490
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1330

Rack travel in mm : 12.20

Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

CONTROL LEVER

control lever
position degree : 302.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.20
Rated speed rpm : 1250
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1345
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 262.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. : $>$ 7.00

Testing:

Rated speed rpm : 400
rack travel mm : 4.70
Tolerance mm : \pm 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 1200
rack travel mm : 13.20
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.20
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 5.00
Tolerance mm : \pm 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.95
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 450
rack travel mm : 12.20
Tolerance mm : \pm 0.20

Pressure hPa : 200
rack travel mm : 9.80
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : > 290
Rated speed rpm : < 320

Check
speed 1/min : > 270
Check
speed 1/min : < 340

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
rack travel mm : 13.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 8.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 136.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 4.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.03.95
Test oil : ISO 4113

Combination No. : 0 402 746 938

Injection pump
Pump designation : PES6P120A72ORS7269
EP type number : 0 412 726 885

Governor
Governor design. : RQ310/1025PA872-1
Governor no. : 0 421 801 672

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8460.21.613

TEST BENCH REQUIREMENTS

Inlet line : 2.4

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1025

Rack travel in mm : 13.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 197.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 310

Rack travel in mm : 5.80

Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 23.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Spread

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1025
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 197.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Spread

Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

RATED SPEED

rack travel mm : 12.00

Rated speed rpm : 1078

Tolerance 1/min : + 8

rack travel mm : 4.00

Rated speed rpm : 1195

Tolerance 1/min : + 15

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 7.30

Testing:

Rated speed rpm : 310
rack travel mm : 5.80
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 445
Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 1025
rack travel mm : 13.50
Tolerance mm : + 0.05

Rated speed rpm : 550
rack travel mm : 13.55
Tolerance mm : + 0.10

Rated speed rpm : 1025
rack travel mm : 13.00
Tolerance mm : + 0.05

Rated speed rpm : 550

rack travel mm : 13.05
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.60
Tolerance mm : \pm 0.40

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 180
rack travel mm : 10.70
Tolerance mm : \pm 0.10

Pressure hPa : 260
rack travel mm : 12.20
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 219.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

rack travel mm : 13.00
Tolerance mm : \pm 0.05

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 124.0
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 310

Rack travel in mm : 5.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.02.98

Test oil : ISO 4113

Combination No. : 0 402 846 064

Injection pump

Pump designation : PE6P120A320RS8030

EP type number : 0 412 826 030

Governor

Governer design. : RQV300...1100PA1017

: -2

Governer no. : 0 421 814 102

Cust. part No. : 3825157-P04 v.05.96

Customer-spec. information

Customer : PENTA

Motor : TWD 1230 E

Power KW : 275.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 150

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.15

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 8.10

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.90
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 277.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 2.5

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1182
guide sleeve
travel mm : 8.71
Tolerance mm : \pm 0.25

Rated speed rpm : 325
guide sleeve
travel mm : 1.41
Tolerance mm : \pm 0.25

Rated speed rpm : 834
guide sleeve
travel mm : 5.40
Tolerance mm : \pm 0.25

Rated speed rpm : 385
guide sleeve
travel mm : 1.98
Tolerance mm : \pm 0.25

Rated speed rpm : 435
guide sleeve
travel mm : 2.45
Tolerance mm : \pm 0.25

Rated speed rpm : 530
guide sleeve
travel mm : 3.11
Tolerance mm : \pm 0.25

Rated speed rpm : 1400
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1250

Rack travel in mm : 9.00
Tolerance mm : \pm 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1800
Del. quantity
cm³/1000 strokes : 277.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 46.0
tolerance degree : \pm 4.0

control lever
position degree : 112.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.90

Rated speed rpm : 1080

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1190

Tolerance 1/min : \pm 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1300

LOW IDLE

control lever

position degree : 82.0

tolerance degree : \pm 4.0

control lever

position degree : 12.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : $>$ 7.20

Testing:

Rated speed rpm : 325

rack travel mm : 4.60

Tolerance mm : \pm 0.10

Rated speed rpm : 360

TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 11.90

Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500

Pressure hPa : 1800

rack travel mm : 11.90

Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : -

rack travel mm : 8.10

Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 1080

rack travel mm : 3.50

Tolerance mm : \pm 0.20

Pressure hPa : 350

rack travel mm : 0.25

Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -

Rated speed rpm : 700

Del. quantity

cm³/1000 strokes : 165.0

Tolerance

cm³/1000 strokes : \pm 1.0

Check tolerance

cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 8.10

Tolerance mm : \pm 0.20

Del. quantity

cm³/1000 strokes : 120.0

Tolerance

cm³/1000 strokes : \pm 21.0

Check tolerance

cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 4.60

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 20.0

Tolerance

cm³/1000 strokes : \pm 2.5

Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.98

Test oil : ISO 4113

Combination No. : 0 403 476 042

Injection pump

Pump designation : PES6MW100/32ORS1132

EP type number : 0 413 406 124

Governor

Governer design. : RSV325...1250MW2A308

: -6

Governer no. : 0 420 085 186

Cust. part No. :

Customer-spec. information

Customer : VOLVO-PENTA

Motor : TD 61 APP

Power KW : 147.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde
assembly

: 0 681 343 009

Opening pressure

bar : 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 2.0

x inside diameter : 6.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 2.95

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.00

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 87.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 325

Rack travel in mm : 6.15
Tolerance mm : \pm 0.05

Del. quantity
cm3/1000 strokes : 14.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Spreed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : \pm 0.35

governor spring
pre-tension
click setting x : 3.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 87.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.0

Spreed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 106.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 10.00
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1355
Tolerance 1/min : \pm 15

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 76.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : $>$ 19.00

Testing:

Rated speed rpm : 325
rack travel mm : 6.15
Tolerance mm : \pm 0.05

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.00
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 6.15
Tolerance mm : \pm 0.05
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.98

Test oil : ISO 4113

Combination No. : 0 403 476 048

Injection pump

Pump designation : PES6MW100/32ORS1135

EP type number : 0 413 406 127

Governor

Governer design. : RSV325...1250MW2A308

: -3

Governer no. : 0 420 085 057

Cust. part No. :

Customer-spec. information

Customer : VOLVO-PENTA

Motor : TD 61 AW

Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holde
assembly

: 0 681 343 009

Opening pressure
bar

: 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

F03

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 2.95

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.20

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 89.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 325

Rack travel in mm : 8.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 89.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

RATED SPEED

rack travel mm : 10.20
Rated speed rpm : 1295
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1355

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1450

LOW IDLE

Testing:

Rated speed rpm : 325
rack travel mm : 8.75
Tolerance mm : ± 0.05

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.20
Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 11.20
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 89.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 8.75
Tolerance mm : \pm 0.05
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.98
Test oil : ISO 4113

Combination No. : 0 403 476 096

Injection pump
Pump designation : PES6MW100/320RS1132
EP type number : 0 413 406 124

Governor
Governor design. : RSV650...750MW4A311
: -4
Governor no. : 0 420 085 161

Cust. part No. :

Customer-spec. information
Customer : PENTA
Motor : TD 61 AG
Power KW : 93.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.95
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.80
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 122.0

Tolerance
cm3/1000 strokes : ± 2.0

Check tolerance
cm3/1000S. : + 4.0

Spread

Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 5.0

Rated speed rpm : 650

Rack travel in mm : 6.20

Tolerance mm : + 0.20

Del. quantity
cm3/1000 strokes : 19.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spread

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : ~ 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 122.0
Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.0

Spread
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 5.0

CONTROL LEVER

control lever
position degree : 87.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 10.80
Rated speed rpm : 750
Tolerance 1/min : + 2

rack travel mm : 4.00
Rated speed rpm : 781
Tolerance 1/min : + 7

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 950

rack travel mm : 4.00
Rated speed rpm : 813
Tolerance 1/min : + 7

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 748
rack travel mm : 10.80

Rated speed rpm : 778
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 950

Rated speed rpm : 749
rack travel mm : 10.80

Rated speed rpm : 779
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 950

Rated speed rpm : 750

rack travel mm : 10.80

Rated speed rpm : 780
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 950

Rated speed rpm : 751
rack travel mm : 10.80

Rated speed rpm : 781
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 950

Rated speed rpm : 752
rack travel mm : 10.80

Rated speed rpm : 782
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 950

Rated speed rpm : 753
rack travel mm : 10.80

Rated speed rpm : 783
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 950

LOW IDLE

control lever
position degree : 82.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 650
rack travel mm : 5.70
Tolerance mm : \pm 0.20

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

Testing:

Rated speed rpm : 650
rack travel mm : 6.20
Tolerance mm : \pm 0.20

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.80
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 650
Rack travel in mm : 6.20
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.98
Test oil : ISO 4113

Combination No. : 0 403 476 108

Injection pump
Pump designation : PES6MW100/320RS1132
EP type number : 0 413 406 124

Governor
Governor design. : RSV325...1400MW2A314
: -3
Governor no. : 0 420 085 173

Cust. part No. :

Customer-spec. information
Customer : PENTA
Motor : TD 610M
Power KW : 147.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

F09

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.95
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 97.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : + 3.0

Spreed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 7.0

Rated speed rpm : 325

Rack travel in mm : 6.10

Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 14.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spreed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 6.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 800
Del. quantity
cm3/1000 strokes : 97.0
Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 108.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 10.30
Rated speed rpm : 1280
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1385
Tolerance 1/min : + 10

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1575

rack travel mm : 4.00
Rated speed rpm : 1420
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 80.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 5.60
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 325
rack travel mm : 6.10
Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 620
Tolerance 1/min : \pm 30

TORQUE CONTROL
Rated speed rpm : 1000
rack travel mm : 11.30
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 800
rack travel mm : 11.30
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
Pressure hPa : -
rack travel mm : 10.00
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 1000

Pressure hPa : 420
rack travel mm : 11.10
Tolerance mm : \pm 0.15

Pressure hPa : 130
rack travel mm : 10.20
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 6.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.98
Test oil : ISO 4113

Combination No. : 0 403 476 130

Injection pump
Pump designation : PES6MW100/320RS1211
EP type number : 0 413 406 202

Governor
Governor design. : RSV300...900MW1A311
: -6
Governor no. : 0 420 085 224

Cust. part No. :

Customer-spec. information
Customer : PENTA
Motor : TWD 610 P

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.95
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 9.70
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 98.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 6.00

Tolerance mm : ± 0.25

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 98.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 106.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 8.70
Rated speed rpm : 920
Tolerance 1/min : ± 3

rack travel mm : 4.00
Rated speed rpm : 945
Tolerance 1/min : ± 8

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1050

rack travel mm : 4.00
Rated speed rpm : 975
Tolerance 1/min : ± 8

LOW IDLE

control lever
position degree : 82.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : ± 0.25

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : ± 0.25

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 9.70
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.00
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.07.98

Test oil : ISO 4113

Combination No. : 0 402 746 639KH

Injection pump

Pump designation : PES6P120A320RS7350
: -3

EP type number : 0 412 726 975

Governor

Governer design. : RQ275/1050PA1217-2

Governer no. : 0 421 801 832

Cust. part No. : CCEP 5172 66-255

Customer-spec. information

Customer : RENAULT V.I.

Motor : MIDRO62045 J41

Power KW : 210.

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40.0

Tolerance °C : +2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.50

Tolerance bar : +0.1

Overflow quantity

min. l/h : 120

Tolerance l/h : +20

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.50

Tolerance bar : +1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.00

Tolerance bar : +1.0

Prestroke mm : 4.80

Tolerance mm : +0.05

Check

tolerance mm : +0.10

Rack travel in mm : 20.25

Tolerance mm : +0.75

Firing order : 1- 5- 3- 6- 2

: - 4

Phasing : 0- 60-120-180-240

: -300

Tolerance : +0.50

Check

tolerance °NW : +0.75

Start of delivery mark

°NW after s.o.d. : -0.45

Tolerance : +0.50

Check

tolerance °NW : +0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 13.40
Tolerance mm : ± 0.05

BASIC SETTING

Rated speed rpm : 600

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 285.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.00

Check tolerance
cm³/1000S. : 9.00

Rated speed rpm : 275

Rack travel in mm : -6.90
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 27.00

Tolerance
cm³/1000 strokes : ± 2.00

Check tolerance
cm³/1000S. : ± 5.00

Spread

Tolerance
cm³/1000 strokes : 8.00

Check tolerance
cm³/1000S. : 12.00

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1129
guide sleeve
travel mm : 6.36

Tolerance mm : ± 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 1.52
Tolerance mm : ± 0.20

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 400
guide sleeve
travel mm : 4.82
Tolerance mm : ± 0.10

Rated speed rpm : 480
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1330
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109.0
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 285.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spread

Tolerance
cm³/1000 strokes : 5.00
Check tolerance
cm³/1000S. : 9.00

CONTROL LEVER

control lever
position degree : 33.0

control lever
position degree : 275.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1115

rack travel mm : 4.00
Rated speed rpm : 1228

rack travel mm : -12.90
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 254.0
tolerance degree : ± 4.0

control lever
position degree : 13.0

Setting point w/out bumper spring

Rated speed rpm : 950

CRT mm min. : > 8.78

Testing:

Rated speed rpm : 275
rack travel mm : -6.90
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 387
Tolerance 1/min : ± 20

TORQUE CONTROL

Rated speed rpm : 600
Tolerance mm : ± 0.05

Rated speed rpm : 1050
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -2.85
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 520
rack travel mm : -0.60
Tolerance mm : ± 0.15

Pressure hPa : 240
rack travel mm : -2.20
Tolerance mm : ± 0.05

Start interlock

Check
speed 1/min : > 100
Check
speed 1/min : < 195

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 150.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000s. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 145.00
Tolerance
cm³/1000 strokes : ± 15.00

Check tolerance
cm³/1000S. : +19.00

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : -6.90
Tolerance mm : +0.10
Del. quantity
cm³/1000 strokes : 27.00
Tolerance
cm³/1000 strokes : +2.00
Check tolerance
cm³/1000S. : +5.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.00

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.10.98
Test oil : ISO 4113

Combination No. : 0 400 464 124

Injection pump
Pump designation : PES4A80D410/3RS1300
EP type number : 0 410 484 015

Governor
Governor design. : RSV325...1150A8C298L
Governor no. : 0 420 232 308

Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : F4L912

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.95
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 10.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 50.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000s. : ± 2.0

Spread

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 4.0

Rated speed rpm : 325

Rack travel in mm : 8.80

Tolerance mm : ± 0.10

Del. quantity

cm3/1000 strokes : 13.0

Tolerance

cm3/1000 strokes : ± 1.5

Check tolerance

cm3/1000S. : ± 3.5

Spread

Tolerance

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : ± 0.20

governor spring

pre-tension

click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure

hPa : -

Del. quantity

cm3/1000 strokes : 50.5

Tolerance

cm3/1000 strokes : ± 0.5

Check tolerance

cm3/1000S. : ± 2.0

Spread

Tolerance

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000S. : 4.0

CONTROL LEVER

control lever

position degree : 108.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.50

Rated speed rpm : 1195

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1245

Tolerance 1/min : ± 15

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1420

rack travel mm : 4.00

Rated speed rpm : 1270

Tolerance 1/min : ± 15

LOW IDLE

control lever

position degree : 73.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 8.30

Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 325

rack travel mm : 8.80

Tolerance mm : ± 0.10

rack travel mm : 2.00

Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1150

rack travel mm : 10.50

Tolerance mm : ± 0.05

Rated speed rpm : 500

rack travel mm : 11.25

Tolerance mm : ± 0.05

Rated speed rpm : 880
rack travel mm : 10.90
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

rack travel mm : 10.90
Tolerance mm : \pm 0.10

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 8.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.98
Test oil : ISO 4113

Combination No. : 0 400 846 596

Injection pump
Pump designation : PES6A95D320RS2693Z
EP type number : 0 410 896 913

Governor
Governor design. : RQ300/1300AB1253-1R
Governor no. : 0 420 201 650

Cust. part No. :

Customer-spec. information
Customer : DAF
Motor : NS 156

TEST BENCH REQUIREMENTS

Inlet line : 2.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 1.5

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 9.00
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1290

Rack travel in mm : 11.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 88.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.5

Rated speed rpm : 300

Rack travel in mm : 6.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 87
Rated speed rpm : 725

Rack travel in mm : 8.00
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1290
Aneroid pressure
hPa : 700
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

RATED SPEED

rack travel mm : 10.70
Rated speed rpm : 1343
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1425
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1550

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : $>$ 7.50

Testing:

Rated speed rpm : 300
rack travel mm : 6.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 545
Tolerance 1/min : \pm 20

TORQUE CONTROL

Dimension a mm : 0.55
Rated speed rpm : 1290
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 850
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 730
rack travel mm : 13.30
Tolerance mm : \pm 0.30

Rated speed rpm : 925
rack travel mm : 12.80
Tolerance mm : \pm 0.30

Rated speed rpm : 1000
rack travel mm : 12.40
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 700
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 600
Pressure hPa : -

rack travel mm : 10.35
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 250
rack travel mm : 10.80
Tolerance mm : \pm 0.10

Pressure hPa : 290
rack travel mm : 11.55
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 86.0
Tolerance
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 2.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 54.5
Tolerance
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 2.5

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 8.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.10.98
Test oil : ISO 4113

Combination No. : 0 400 866 149

Injection pump
Pump designation : PES6A100D320/3RS2763
EP type number : 0 410 806 006

Governor
Governor design. : RSV375...1000A0C2190
: -44R
Governor no. : 0 420 233 250

Cust. part No. :

Customer spec. information

Customer : CDC
Motor : 6 CT 8.3
Power KW : 145.0

TEST BENCH REQUIREMENTS

Inlet line : 2.

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 133.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.5

Spreed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 6.5

Rated speed rpm : 375

Rack travel in mm : 5.40

Tolerance mm : ± 0.10

Del. quantity
cm3/1000 strokes : 16.0

Tolerance
cm3/1000 strokes : ± 2.0

Check tolerance
cm3/1000S. : ± 4.5

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : -

Del. quantity
cm3/1000 strokes : 133.5

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.5

Spreed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 81.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.95
Rated speed rpm : 1055
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1130
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1200

rack travel mm : 4.00
Rated speed rpm : 1135
Tolerance 1/min : ± 15

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 375
rack travel mm : 4.90
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 375
rack travel mm : 5.40
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 450
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.95
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 13.70
Tolerance mm : ± 0.10

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 375
Rack travel in mm : 5.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.10.98

Test oil : ISO 4113

Combination No. : 0 400 866 194

Injection pump

Pump designation : PES6A100D320/3RS2763

EP type number : 0 410 806 006

Governor

Governer design. : RSV415...1175AOC2190

: -69R

Governer no. : 0 420 233 308

Cust. part No. : 3921135

Customer-spec. information

Customer : CDC

Motor : 6 CT 8.3

Power KW : 129.0

TEST BENCH REQUIREMENTS

Inlet line : 2.

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde assembly

: 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0

Tolerance bar : ± 1.0

Prestroke mm : 2.85

Tolerance mm : ± 0.05

Check tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1175

Rack travel in mm : 10.45

Tolerance mm : ± 0.05

Del. quantity cm3/1000 strokes : 99.5

Tolerance cm3/1000 strokes : ± 1.0

Check tolerance cm3/1000S. : ± 3.5

Speed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 6.5

Rated speed rpm : 415

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 16.5

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Speed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1175
Aneroid pressure
hPa : -

Del. quantity
cm3/1000 strokes : 99.5

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.5

Speed
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 90.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.45
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1310
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1315
Tolerance 1/min : \pm 15

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 415
rack travel mm : 4.70
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

Testing:

Rated speed rpm : 415
rack travel mm : 5.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 490
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1175
rack travel mm : 10.45
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 10.80
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 415

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.02.98
Test oil : ISO 4113

Combination No. : F 002 A0Z 092

Injection pump
Pump designation : PES6A95D320/3RS2928
EP type number : F 002 A10 019

Governor
Governor design. : RSV450...750A4C965R
Governor no. : F 002 A20 251

Cust. part No. : 393 3100

Customer-spec. information
Customer : CUMMINS
Motor : 6BT - 590
Power KW : 89.4

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 11.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 110.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.0

Spreed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 6.5

Rated speed rpm : 450

Rack travel in mm : 7.50

Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 14.5

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 110.0

G04

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.0

Spreed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 96.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.70
Rated speed rpm : 800
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 855
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 950

rack travel mm : 4.00
Rated speed rpm : 865
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 81.0
tolerance degree : \pm 4.0

Control lever difference
Grad : 15.0
tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 7.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

Testing:

Rated speed rpm : 450
rack travel mm : 7.50
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 11.75
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 118.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 7.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 14.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 14.02.98
Test oil : ISO 4113

Combination No. : F 002 A0Z 093

Injection pump
Pump designation : PES6A95D320/3RS2928
EP type number : F 002 A10 019

Governor
Governor design. : RSV450...750A7C966R
Governor no. : F 002 A20 250

Cust. part No. : 3933102

Customer-spec. information
Customer : CUMMINS
Motor : 6BTA-590
Power KW : 116.2

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 13.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 131.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Spread

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 6.5

Rated speed rpm : 450

Rack travel in mm : 7.30
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 8.5

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spread

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 131.0

G07

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Spread

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.30
Rated speed rpm : 795
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 835
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 950

rack travel mm : 4.00
Rated speed rpm : 850
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 78.0
tolerance degree : + 4.0

Control lever difference
Grad : 19.0
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 6.80
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 450
rack travel mm : 7.30
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 13.35
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 450

Rack travel in mm : 7.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 8.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.97
Test oil : ISO 4113

Combination No. : 0 402 066 714

Injection pump
Pump designation : PES6P110A120RS3336
: -1
EP type number : 0 412 016 751

Governor
Governor design. : RSV440...900P2A687
Governor no. : 0 421 833 609

Cust. part No. : 3933640

Customer-spec. information
Customer : CDC
Motor : 6CTA
Power KW : 194.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 8.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference
and maximum rack
travel : 15.00
Difference ° CS : 1.50

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.75
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 201.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 440

Rack travel in mm : 5.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 26.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

G10

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 201.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 87.0
tolerance degree : \pm 6.0

RATED SPEED

rack travel mm : 13.75
Rated speed rpm : 1010
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1075
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1200

rack travel mm : 4.00
Rated speed rpm : 1090
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 66.0
tolerance degree : \pm 6.0

Control lever difference
Grad : 21.0

tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 440
rack travel mm : 4.80

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

Testing:

Rated speed rpm : 440
rack travel mm : 5.30
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 14.75
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1500

Rated speed rpm : 900
Pressure hPa : -
rack travel mm : 11.10
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 900

Pressure hPa : 995
rack travel mm : 13.45
Tolerance mm : \pm 0.20

Pressure hPa : 650
rack travel mm : 12.05
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 900
Del. quantity
cm3/1000 strokes : 123.5

Tolerance

cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm3/1000 strokes : 154.0
Tolerance
cm3/1000 strokes : \pm 20.0
Check tolerance
cm3/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 440

Rack travel in mm : 5.30
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 26.5
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 4.5
Spreed
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 6.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.08.98
Test oil : ISO 4113

Combination No. : 0 402 066 715

Injection pump
Pump designation : PES6P110A120RS3397
EP type number : 0 412 016 758

Governor
Governor design. : RSV500...1000P2A689
Governor no. : 0 421 833 611

Cust. part No. : 3930529

Customer-spec. information
Customer : CDC
Motor : 6CT
Power KW : 166.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 8.25
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende
and maximum rack
travel : 15.00
Difference ° CS : 1.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.50
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 172.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 500

Rack travel in mm : 4.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 27.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure
hPa : 1300

Del. quantity
cm³/1000 strokes : 172.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 96.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.50

Rated speed rpm : 1075

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00

Rated speed rpm : 1155

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1275

rack travel mm : 4.00

Rated speed rpm : 1155

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

LOW IDLE

control lever
position degree : 76.0
tolerance degree : \pm 4.0

Control lever difference
Grad : 20.0
tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 4.40

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

Testing:

Rated speed rpm : 500
rack travel mm : 4.90
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.50
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.75
Tolerance mm : \pm 0.20

Rated speed rpm : 900
rack travel mm : 13.20
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 950
rack travel mm : 12.70
Tolerance mm : \pm 0.20

Pressure hPa : 850
rack travel mm : 12.30
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 205.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

rack travel mm : 13.20
Tolerance mm : \pm 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 500
Rack travel in mm : 4.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 27.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed

Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113

Combination No. : 0 402 076 779

Injection pump
Pump designation : PES6P120A720R.3352
EP type number : 0 412 026 780

Governor
Governor design. : RSV400...900P4A611
Governor no. : 0 421 833 489

Cust. part No. : RE63767

Customer-spec. information
Customer : DEERE
Motor : 6081AF001
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

°NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 800

Rack travel in mm : 13.90
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 219.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 400

Rack travel in mm : 5.15
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.5

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 219.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.90

Rated speed rpm : 910

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 950

Tolerance 1/min : \pm 5

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1020

rack travel mm : 4.00

Rated speed rpm : 970

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 77.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 4.65

Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.15
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 800
rack travel mm : 13.90
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100

Check
speed 1/min : > 80

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.15
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 25.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.05.98
Test oil : ISO 4113

Combination No. : 0 402 076 791

Injection pump
Pump designation : PES6P120A720RS3352
EP type number : 0 412 026 780

Governor
Governor design. : RSV400...1100P2A599
: -6
Governor no. : 0 421 833 526

Cust. part No. : RE66241

Customer-spec. information
Customer : DEERE
Motor : 6081TF001
Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 6.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.55
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 133.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 400

Rack travel in mm : 5.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.50

G20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : \pm 6.0

RATED SPEED

rack travel mm : 10.50
Rated speed rpm : 1160
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1215
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1225
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 5.70
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.55
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 550
rack travel mm : 11.00
Tolerance mm : \pm 0.20

Pressure hPa : 210
rack travel mm : 9.80
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 148.5

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.03.96
Test oil : ISO 4113

Combination No. : 0 402 076 793

Injection pump
Pump designation : PES6P120A720RS3367
EP type number : 0 412 026 788

Governor
Governor design. : RSV400...1100P2A599
: -8
Governor no. : 0 421 833 528

Cust. part No. : RE66243

Customer-spec. information
Customer : DEERE
Motor : 6081AF001
Power KW : 168.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

°NW after s.o.d. : 6.75
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.10
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 151.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 400

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 30.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 151.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 95.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.10

Rated speed rpm : 1160

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1210

Tolerance 1/min : \pm 5

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1350

rack travel mm : 4.00

Rated speed rpm : 1210

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 69.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 5.10

Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.60
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.10
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.50
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 760
rack travel mm : 12.00
Tolerance mm : \pm 0.20

Pressure hPa : 350
rack travel mm : 10.30
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 94.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 30.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.05.98
Test oil : ISO 4113

Combination No. : 0 402 076 817

Injection pump
Pump designation : PES6P120A720RS3367
EP type number : 0 412 026 788

Governor
Governor design. : RSV525...1000P2A640
: -1
Governor no. : 0 421 833 604

Cust. part No. : RE71286

Customer-spec. information
Customer : DEERE
Motor : 6081HT001
Power KW : 186.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

°NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.00
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 176.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 525

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 26.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure

hPa : 1400

Del. quantity
cm³/1000 strokes : 176.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 87.5
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.00

Rated speed rpm : 1065

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1115

Tolerance 1/min : \pm 5

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1200

rack travel mm : 4.00

Rated speed rpm : 1120

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 525

rack travel mm : 4.30

Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 525
rack travel mm : 5.10
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.80
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.25
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 975
rack travel mm : 13.40
Tolerance mm : \pm 0.20

Pressure hPa : 830
rack travel mm : 12.70
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 197.5
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 525
Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 26.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.06.97
Test oil : ISO 4113

Combination No. : 0 402 076 819

Injection pump
Pump designation : PES6P120A720RS3352
EP type number : 0 412 026 780

Governor
Governor design. : RSV425...1100P2A599
: -9
Governor no. : 0 421 833 606

Cust. part No. : RE500742

Customer-spec. information
Customer : DEERE
Motor : 6081AF001
Power KW : 187.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

G28

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

°NW after s.o.d. : 8.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.45
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 161.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 425

Rack travel in mm : 5.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 29.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 1600

Del. quantity
cm³/1000 strokes : 161.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.45

Rated speed rpm : 1145

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1205

Tolerance 1/min : \pm 5

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1350

rack travel mm : 4.00

Rated speed rpm : 1215

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 425

rack travel mm : 5.40

Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 425
rack travel mm : 5.90
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.80
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1600

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 960
rack travel mm : 11.70
Tolerance mm : \pm 0.20

Pressure hPa : 475
rack travel mm : 9.80
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100

Check
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 167.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 71.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 425
Rack travel in mm : 5.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.05.98
Test oil : ISO 4113

Combination No. : 0 402 746 611

Injection pump
Pump designation : PES6P120A320RS7372
EP type number : 0 412 726 940

Governor
Governor design. : RQV250...1400PA1279K
Governor no. : 0 421 815 508

Cust. part No. : 3866783

Customer-spec. information
Customer : CDC
Motor : 6BTA
Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

H04

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 11.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 186.5

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Speed

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 7.00

Tolerance mm : + 0.20

Del. quantity
cm3/1000 strokes : 28.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 5.0

Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1570
guide sleeve
travel mm : 9.90
Tolerance mm : + 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.00
Tolerance mm : + 0.20

Rated speed rpm : 986
guide sleeve
travel mm : 5.80
Tolerance mm : + 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 3.00
Tolerance mm : + 0.25

Rated speed rpm : 1860
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 186.5
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 121.5
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 12.80
Rated speed rpm : 1465
Tolerance 1/min : + 5

rack travel mm : 6.80
Rated speed rpm : 1580
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1725

LOW IDLE

control lever
position degree : 77.0
tolerance degree : + 4.0

Control lever difference
Grad : 48.5
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 8.60

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : \pm 0.20

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 13.45
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 13.20
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.00
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1400
Pressure hPa : 1200

Rated speed rpm : 1000
Pressure hPa : -
rack travel mm : 9.65
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1400
Pressure hPa : 620
rack travel mm : 12.30
Tolerance mm : \pm 0.20

Pressure hPa : 280
rack travel mm : 10.65
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 240

Check
speed 1/min : > 80
Check
speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 178.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 13.00
Tolerance mm : \pm 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 98.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 170.5
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 7.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 28.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 402 746 619

Injection pump
Pump designation : PES6P120A720RS7423
EP type number : 0 412 726 963

Governor
Governor design. : RQV325...900PA909
: -14K
Governor no. : 0 421 815 533

Cust. part No. : 313GC5229-P4

Customer-spec. information
Customer : MACK
Motor : EN7400
Power KW : 298.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 16.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 277.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 5.10

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 44.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 957
guide sleeve
travel mm : 8.66
Tolerance mm : ± 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.79
Tolerance mm : ± 0.20

Rated speed rpm : 763
guide sleeve
travel mm : 7.04
Tolerance mm : ± 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 4.05

Tolerance mm : ± 0.25

Rated speed rpm : 1350
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 277.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 115.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 15.00
Rated speed rpm : 945
Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1140
Tolerance 1/min : ± 15
Check
speed 1/min : ± 20

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 62.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > 7.00

Testing:

Rated speed rpm : 325
rack travel mm : 5.10
Tolerance mm : \pm 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 16.00
Tolerance mm : \pm 0.05

Rated speed rpm : 625
rack travel mm : 15.60
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 13.90
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1500

Rated speed rpm : 900
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 900
Pressure hPa : 980
rack travel mm : 14.40
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 10.35
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 275

H10

Check
speed 1/min : > 80
Check
speed 1/min : < 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 305.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 13.90
Tolerance mm : \pm 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.20
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.12.97
Test oil : ISO 4113
Combination No. : 0 402 776 820
Injection pump
Pump designation : PES6P120A720RS7382
EP type number : 0 412 726 943
Governor
Governor design. : RSV400...1100POA547
: -6
Governor no. : 0 421 833 488

Cust. part No. : RE501785

Customer-spec. information

Customer : DEERE
Motor : 6081 AF001
Power KW : 205.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 079
Inlet press. bar : 2.0
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

H12

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

°NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.80
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 198.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 5.85
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 28.5

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure

hPa : 1400

Del. quantity
cm³/1000 strokes : 198.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 95.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.80

Rated speed rpm : 1170

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1225

Tolerance 1/min : \pm 5

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1300

rack travel mm : 4.00

Rated speed rpm : 1230

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.35
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.85
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.80
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 12.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.75
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 880
rack travel mm : 11.50
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 9.70
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 211.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.85
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 28.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 402 776 838

Injection pump
Pump designation : PES6P120A720RS7382
EP type number : 0 412 726 943

Governor
Governor design. : RSV625...1100POA547
: -14
Governor no. : 0 421 833 545

Cust. part No. : RE67358

Customer-spec. information
Customer : DEERE
Motor : 6081 HZ001
Power KW : 214.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

°NW after s.o.d. : 9.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 196.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 625

Rack travel in mm : 5.10
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 21.5

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 5.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 2000

Del. quantity
cm³/1000 strokes : 196.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.40

Rated speed rpm : 1175
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1235

rack travel mm : 0.85
Tolerance mm : + 0.55

Rated speed rpm : 1350

rack travel mm : 4.00

Rated speed rpm : 1235
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 80.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 625
rack travel mm : 4.60

Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 625
rack travel mm : 5.10
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.45
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 2000

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.60
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 1350
rack travel mm : 12.30
Tolerance mm : \pm 0.20

Pressure hPa : 630
rack travel mm : 10.50
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 262.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 136.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 625
Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.98

Test oil : ISO 4113

Combination No. : 0 403 466 183DA

Injection pump

Pump designation : PES6MW100/120RS1247

EP type number : 0 413 406 248

Governor

Governer design. : RSV550...1100MW5A415

Governer no. : 0 420 085 306

Cust. part No. : 3935489

Customer-spec. information

Customer : CDC

Motor : 6 CTA

Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

H18

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 3.20

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 8.50

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 15.00

Difference ° CS : 1.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.20
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 163.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 550

Rack travel in mm : 5.05
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 163.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.20

Rated speed rpm : 1170

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00

Rated speed rpm : 1255

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 1.00

Tolerance mm : \pm 0.70

Rated speed rpm : 1300

rack travel mm : 4.00

Rated speed rpm : 1265

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

LOW IDLE

control lever
position degree : 78.0
tolerance degree : \pm 4.0

Control lever difference
Grad : 26.0
tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 550
rack travel mm : 4.55
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

Testing:

Rated speed rpm : 550
rack travel mm : 5.05
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 13.90
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 900
rack travel mm : 13.30

H2O

Tolerance mm : \pm 0.20

Pressure hPa : 560
rack travel mm : 11.80
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 177.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

rack travel mm : 13.90
Tolerance mm : \pm 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 119.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 550
Rack travel in mm : 5.05
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.10.98
Test oil : ISO 4113

Combination No. : 0 401 816 715

Injection pump
Pump designation : PE6P120A300RS3315
EP type number : 0 411 826 808

Governor
Governor design. :
Governor no. :

Cust. part No. : 866027-P04 v.10.93

Customer-spec. information
Customer : PENTA
Motor : TAD 730 G

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 205
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.90
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 243.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 3.90
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 243.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

LOW IDLE

Testing:

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 10.90
Tolerance mm : \pm 0.10

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 3.90
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.11.97

Test oil : ISO 4113

Combination No. : 0 401 846 843

Injection pump

Pump designation : PE6P120A720RS3069

EP type number : 0 411 826 712

Governor

Governer design. : RQV300...1000PA501

: -4

Governer no. : 0 421 813 609

Cust. part No. :

Customer-spec. information

Customer : IVECO-FIAT

Motor : 8210.22.371

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holde
assembly

: 1 688 901 019

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.55

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.55

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 206.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 4.0

Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.20

Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 20.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Speed
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1000
guide sleeve
travel mm : 8.10
Tolerance mm : + 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.70
Tolerance mm : + 0.20

Rated speed rpm : 450
guide sleeve
travel mm : 3.10
Tolerance mm : + 0.20

Rated speed rpm : 800
guide sleeve
travel mm : 5.90
Tolerance mm : + 0.20

Rated speed rpm : 1300
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

H25

Aneroid pressure
hPa : 700

Del. quantity
cm3/1000 strokes : 206.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Speed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 11.50
Rated speed rpm : 1045
Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1145
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 67.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 7.70

Testing:

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : + 0.10

Rated speed rpm : 370

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 12.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.80
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 10.85
Tolerance mm : \pm 0.15

Pressure hPa : 280
rack travel mm : 11.85
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 21.11.91

Test oil : ISO 4113

Combination No. : 0 402 016 022

Injection pump

Pump designation : PES6P120A700RS532-1

EP type number : 0 412 026 061

Governor

Governer design. :

Governer no. :

Cust. part No. :

Customer-spec. information

Customer : IVECO-AIFO

Motor : 8361 SRM 37

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Test nozzle holde assembly

: 1 688 901 105

Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 2.5

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.55

Tolerance mm : ± 0.05

Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check
tolerance °NW : ± 0.75

BASIC SETTING

Del. quantity
cm3/1000 strokes : 215.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 4.0

Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 19.0
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 215.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 19.0

H28

Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.09.97

Test oil : ISO 4113

Combination No. : 0 402 046 880

Injection pump

Pump designation : PES6P120B320RS3377

EP type number : 0 412 026 796

Governor

Governer design. : RQ750PA1304

Governer no. : 0 421 801 811

Cust. part No. :

Customer-spec. information

Customer : PERKINS

Motor : EAGLE2006TWG2

Power KW : 287.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 115

Tolerance l/h : ± 20.0

Test nozzle holde assembly

: 1 688 901 103

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.80

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 4- 2- 6- 3-

: 5

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.90

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 272.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rack travel in mm : 4.30
Tolerance mm : \pm 0.20
Del. quantity
cm3/1000 strokes : 30.0
Tolerance
cm3/1000 strokes : \pm 4.0
Check tolerance
cm3/1000S. : \pm 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 763
guide sleeve
travel mm : 4.57
Tolerance mm : \pm 0.15

Rated speed rpm : 790
guide sleeve
travel mm : 8.50
Tolerance mm : \pm 0.25

Rated speed rpm : 809
guide sleeve
travel mm : 12.00
Tolerance mm : \pm 0.25

Rated speed rpm : 860
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 272.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : \pm 4.0

control lever
position degree : 94.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 765
rack travel mm : 11.90

Rated speed rpm : 785
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 900

Rated speed rpm : 766
rack travel mm : 11.90

Rated speed rpm : 786
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 900

Rated speed rpm : 767
rack travel mm : 11.90

Rated speed rpm : 787
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 900

Rated speed rpm : 768
rack travel mm : 11.90

Rated speed rpm : 788
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 900

Rated speed rpm : 769
rack travel mm : 11.90

Rated speed rpm : 789
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 900

Rated speed rpm : 770
rack travel mm : 11.90

Rated speed rpm : 790
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 900

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.90
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.90
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 260.0

Tolerance
cm³/1000 strokes : \pm 25.0
Check tolerance
cm³/1000S. : \pm 29.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.98

Test oil : ISO 4113

Combination No. : 0 402 076 801A

Injection pump

Pump designation : PES6P120A1320/5RS337
: 2Y

EP type number : 0 412 026 793

Governor

Governer design. : RSV350...1050P1A641

Governer no. : 0 421 833 553

Cust. part No. : 1388638

Customer-spec. information

Customer : SCANIA

Motor : DS1196A,-97A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Test nozzle holde assembly

: 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.45

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.65
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 234.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rack travel in mm : 6.00
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 4.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 234.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 7.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : \pm 4.0

control lever
position degree : 84.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 14.60

Rated speed rpm : 788
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 14.60

Rated speed rpm : 789
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 14.60

Rated speed rpm : 790
Tolerance 1/min : \pm 4

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 14.60

Rated speed rpm : 791
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 14.60

Rated speed rpm : 792
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 14.60

Rated speed rpm : 793
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.65
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.65
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 240
rack travel mm : 14.00
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 15.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.98

Test oil : ISO 4113

Combination No. : 0 402 076 801B

Injection pump

Pump designation : PES6P120A1320/5RS337
: 2Y

EP type number : 0 412 026 793

Governor

Governer design. : RSV350...1050P1A641

Governer no. : 0 421 833 553

Cust. part No. : 1388640

Customer-spec. information

Customer : SCANIA

Motor : DS11 99M

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Test nozzle holde
assembly

: 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.45

Tolerance mm : ± 0.05

Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.55
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 238.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rack travel in mm : 6.00
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 4.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 238.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : \pm 4.0

control lever
position degree : 84.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 14.50

Rated speed rpm : 788
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 14.50

Rated speed rpm : 789
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 14.50

Rated speed rpm : 790
Tolerance 1/min : \pm 4

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 14.50

Rated speed rpm : 791
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 14.50

Rated speed rpm : 792
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 14.50

Rated speed rpm : 793
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.55
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 240
rack travel mm : 14.00
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 15.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.98
Test oil : ISO 4113

Combination No. : 0 402 076 801C

Injection pump
Pump designation : PES6P120A1320/5RS337
: 2Y
EP type number : 0 412 026 793

Governor
Governor design. : RSV350...1050P1A641
Governor no. : 0 421 833 553

Cust. part No. : 1397107

Customer-spec. information
Customer : SCANIA
Motor : DSI1180M,-81M

TEST BENCH REQUIREMENTS

Inlet Line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.85
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 240.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rack travel in mm : 6.00
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 4.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 240.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : \pm 4.0

control lever
position degree : 84.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 14.80

Rated speed rpm : 788
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 14.80

Rated speed rpm : 789
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 14.80

Rated speed rpm : 790
Tolerance 1/min : \pm 4

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 14.80

Rated speed rpm : 791
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 14.80

Rated speed rpm : 792
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 14.80

Rated speed rpm : 793
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.85
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.85
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 240
rack travel mm : 14.00
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 15.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.98
Test oil : ISO 4113

Combination No. : 0 402 076 802A

Injection pump
Pump designation : PES6P120A1320/5RS337
: 3

EP type number : 0 412 026 794

Governor
Governor design. : RSV350...1050P8A643
Governor no. : 0 421 833 555

Cust. part No. : 1388635

Customer-spec. information
Customer : SCANIA
Motor : DS11 94A,-95A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.55
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 209.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 209.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : \pm 4.0

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.50
Rated speed rpm : 1095

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1190

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1210

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 23.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.55
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 14.55
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 410
rack travel mm : 12.60
Tolerance mm : \pm 0.20

Pressure hPa : 670
rack travel mm : 13.95
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 197.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.98
Test oil : ISO 4113

Combination No. : 0 402 076 802B

Injection pump
Pump designation : PES6P120A1320/5RS337
: 3
EP type number : 0 412 026 794

Governor
Governor design. : RSV350...1050P8A643
Governor no. : 0 421 833 555

Cust. part No. : 1388636

Customer-spec. information
Customer : SCANIA
Motor : DS1198M,DSI1179M

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.25
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 49.0
tolerance degree : \pm 4.0

control lever
position degree : 99.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 14.20

Rated speed rpm : 945

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00

Rated speed rpm : 1045

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1200

rack travel mm : 4.00

Rated speed rpm : 1065

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 23.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.25
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 15.25
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.10
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 450
rack travel mm : 13.60
Tolerance mm : \pm 0.20

Pressure hPa : 660
rack travel mm : 14.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 183.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 5.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.98
Test oil : ISO 4113
Combination No. : 0 402 076 802c
Injection pump
Pump designation : PES6P120A1320/5RS337
: 3
EP type number : 0 412 026 794
Governor
Governor design. : RSV350...1050P8A643
Governor no. : 0 421 833 555

Cust. part No. : 1388637

Customer-spec. information
Customer : SCANIA
Motor : DSI11 73M, -78M

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.35
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : \pm 4.0

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 14.30
Rated speed rpm : 1095

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1195

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1225

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 23.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 15.35
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.10
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 450
rack travel mm : 13.60
Tolerance mm : \pm 0.20

Pressure hPa : 660
rack travel mm : 14.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 183.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 5.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.98

Test oil : ISO 4113

Combination No. : 0 402 076 802D

Injection pump

Pump designation : PES6P120A1320/5RS337
: 3

EP type number : 0 412 026 794

Governor

Governer design. : RSV350...1050P8A643

Governer no. : 0 421 833 555

Cust. part No. : 1359594

Customer-spec. information

Customer : SCANIA

Motor : DSI11 71A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Test nozzle holde assembly

: 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.45

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.15
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 221.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure

hPa : 1500

Del. quantity
cm³/1000 strokes : 221.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : \pm 4.0

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.10

Rated speed rpm : 1095

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00

Rated speed rpm : 1185

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1350

rack travel mm : 4.00

Rated speed rpm : 1205

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 23.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.15
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 925
rack travel mm : 14.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.10
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 510
rack travel mm : 13.10
Tolerance mm : \pm 0.20

Pressure hPa : 780
rack travel mm : 14.50
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.98

Test oil : ISO 4113

Combination No. : 0 402 076 811A

Injection pump

Pump designation : PES6P120A1320/5RS338
: 0

EP type number : 0 412 026 800

Governor

Governer design. : RSV350...1100P8A664

Governer no. : 0 421 833 584

Cust. part No. : 1393866

Customer-spec. information

Customer : SCANIA

Motor : DS(I,C)9...A/M

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Vibration

damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Test nozzle holde
assembly

: 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.45

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.85
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 196.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED
rack travel mm : 12.80
Rated speed rpm : 1145
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

Check
speed 1/min : \pm 20

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1250
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.70
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
rack travel mm : 13.85

Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 11.60
Tolerance mm : \pm 0.20

Pressure hPa : 540
rack travel mm : 13.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 186.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.20

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.98
Test oil : ISO 4113

Combination No. : 0 402 076 811B

Injection pump
Pump designation : PES6P120A1320/5RS338
: 0
EP type number : 0 412 026 800

Governor
Governor design. : RSV350...1100P8A664
Governor no. : 0 421 833 584

Cust. part No. : 1403477 (Version B)

Customer-spec. information
Customer : SCANIA
Motor : DSI9 51A

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.35
Tolerance mm : \pm 0.05

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

K01

Aneroid pressure
hPa : 1500

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : \pm 4.0

control lever
position degree : 109.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.30
Rated speed rpm : 1145

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1245

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 77.0
tolerance degree : \pm 4.0

control lever
position degree : 27.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.70

Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
rack travel mm : 12.35
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 230
rack travel mm : 11.15
Tolerance mm : \pm 0.15

Pressure hPa : 310
rack travel mm : 11.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1100
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.98
Test oil : ISO 4113

Combination No. : 0 402 076 812A

Injection pump
Pump designation : PES6P120A1320/5RS338
: 1
EP type number : 0 412 026 801

Governor
Governor design. : RSV350...1100P1A666
Governor no. : 0 421 833 585

Cust. part No. : 1393869

Customer-spec. information
Customer : SCANIA
Motor : DS9 50A

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 16.35
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 217.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rack travel in mm : 6.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 4.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 217.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 7.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : \pm 4.0

control lever
position degree : 84.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 15.30

Rated speed rpm : 788
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 15.30

Rated speed rpm : 789
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 15.30

Rated speed rpm : 790
Tolerance 1/min : \pm 4

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 15.30

Rated speed rpm : 791
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 15.30

Rated speed rpm : 792
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 15.30

Rated speed rpm : 793
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 16.35
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 16.35
Tolerance mm : \pm 0.05

K05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 340
rack travel mm : 13.10
Tolerance mm : \pm 0.20

Pressure hPa : 740
rack travel mm : 15.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.10.98
Test oil : ISO 4113

Combination No. : 0 402 076 822

Injection pump
Pump designation : PES6P110A320RS3400
EP type number : 0 412 016 759

Governor
Governor design. : RSV300...1000P1A695
Governor no. : 0 421 833 618

Cust. part No. : 11032943 v. 25.02.98

Customer-spec. information
Customer : VCE

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.30
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 131.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 9.00

Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 49.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 5.0

Spreed

Tolerance
cm3/1000 strokes : 7.0

Check tolerance
cm3/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50

governor spring
pre-tension
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -

K07

Del. quantity
cm3/1000 strokes : 131.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 106.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.30

Rated speed rpm : 1022

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1075

Tolerance 1/min : \pm 10

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 77.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 9.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 370
Tolerance 1/min : \pm 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00
Tolerance mm : \pm 2.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.30
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 700
Pressure hPa : 1500
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 700
Pressure hPa : -
rack travel mm : 10.90
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 700
Pressure hPa : 660
rack travel mm : 2.00
Tolerance mm : \pm 0.20

Pressure hPa : 110
rack travel mm : 0.25
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 9.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 49.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.98

Test oil : ISO 4113

Combination No. : 0 402 086 702

Injection pump

Pump designation : PES6P100B321RS3388

EP type number : 0 412 006 714

Governor

Governer design. : RSV400...1125POA674

Governer no. : 0 421 833 592

Cust. part No. : 51.11103-7564

Customer-spec. information

Customer : MAN

Motor : D0826 LE531

Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 150

Tolerance l/h : ± 10.0

Test nozzle holde assembly

: 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.30

Tolerance mm : ± 0.05

Check
tolerance mm : ± 0.10

Rack travel in mm : 13.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10

Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 925

Rack travel in mm : 14.10
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 174.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 400

Rack travel in mm : 4.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 925

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 174.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.60

Rated speed rpm : 1175

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1265

Tolerance 1/min : \pm 15

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1400

rack travel mm : 4.00

Rated speed rpm : 1270

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 4.40

Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 4.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 925
rack travel mm : 14.10
Tolerance mm : \pm 0.05

Rated speed rpm : 1125
rack travel mm : 13.60
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : \pm 0.10

Rated speed rpm : 1025
rack travel mm : 13.95
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.10
Tolerance mm : \pm 0.15

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.45
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 150
rack travel mm : 9.75
Tolerance mm : \pm 0.05

Pressure hPa : 800
rack travel mm : 13.05
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500
Rated speed rpm : 1125
Del. quantity
cm³/1000 strokes : 161.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : 1500
Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 187.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 91.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.45
Tolerance mm : \pm 0.45
Del. quantity
cm³/1000 strokes : 112.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.09.97
Test oil : ISO 4113

Combination No. : 0 402 086 703

Injection pump
Pump designation : PES6P100B321RS3388
EP type number : 0 412 006 714

Governor
Governor design. : RSV400...1125POA682
Governor no. : 0 421 833 603

Cust. part No. : 51.11103-7533

Customer-spec. information

Customer : MAN
Motor : D0826 LE527
Power KW : 169.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 925

Rack travel in mm : 13.90
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 169.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 400

Rack travel in mm : 4.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 925
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 169.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.10
Rated speed rpm : 1175

Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1265

Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.30
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 4.80

Tolerance mm : \pm 0.10
 rack travel mm : 2.00
 Rated speed rpm : 500
 Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 925
 rack travel mm : 13.90
 Tolerance mm : \pm 0.05

Rated speed rpm : 1125
 rack travel mm : 13.10
 Tolerance mm : \pm 0.10

Rated speed rpm : 700
 rack travel mm : 14.00
 Tolerance mm : \pm 0.10

Rated speed rpm : 1000
 rack travel mm : 13.70
 Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1500
 rack travel mm : 14.00
 Tolerance mm : \pm 0.10

Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : 9.50
 Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 150
 rack travel mm : 10.00
 Tolerance mm : \pm 0.05

Pressure hPa : 800
 rack travel mm : 13.20
 Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1500

Rated speed rpm : 1125
 Del. quantity
 cm³/1000 strokes : 146.5
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : 1500
 Rated speed rpm : 700
 rack travel mm : 14.00
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 180.5
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 90.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 9.50
 Tolerance mm : \pm 0.20
 Del. quantity
 cm³/1000 strokes : 112.0
 Tolerance
 cm³/1000 strokes : \pm 10.0
 Check tolerance
 cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
 Rack travel in mm : 4.80
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 25.0
 Tolerance
 cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : +- 6.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.08.98
Test oil : ISO 4113

Combination No. : 0 402 086 704

Injection pump
Pump designation : PES6P100B321RS3388
EP type number : 0 412 006 714

Governor
Governor design. : RSV400...1125POA699
Governor no. : 0 421 833 625

Cust. part No. : 51.11103-7607

Customer-spec. information

Customer : MAN
Motor : D0826 LE531
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 925

Rack travel in mm : 14.10
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 174.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 400

Rack travel in mm : 4.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 925
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 174.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.60
Rated speed rpm : 1175
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1265
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1270
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.40
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 4.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 925
rack travel mm : 14.10
Tolerance mm : \pm 0.05

Rated speed rpm : 1125
rack travel mm : 13.60
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : \pm 0.10

Rated speed rpm : 1025
rack travel mm : 13.95
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.10
Tolerance mm : \pm 0.15

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.45
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 150
rack travel mm : 9.75
Tolerance mm : \pm 0.05

Pressure hPa : 800
rack travel mm : 13.05
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1125
Del. quantity
cm³/1000 strokes : 161.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 187.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 91.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.45
Tolerance mm : \pm 0.45
Del. quantity
cm³/1000 strokes : 112.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.08.98
Test oil : ISO 4113

Combination No. : 0 402 086 705

Injection pump
Pump designation : PES6P100B321RS3388
EP type number : 0 412 006 714

Governor
Governor design. : RSV400...1125POA698
Governor no. : 0 421 833 624

Cust. part No. : 51.11103-7606

Customer-spec. information
Customer : MAN
Motor : D0826 LE527
Power KW : 169.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 925

Rack travel in mm : 13.80
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 166.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 400

Rack travel in mm : 4.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 925
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 101.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.10
Rated speed rpm : 1175
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1265
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 77.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.30
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 4.80

Tolerance mm : \pm 0.10
rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 925
rack travel mm : 13.80
Tolerance mm : \pm 0.05

Rated speed rpm : 1125
rack travel mm : 13.10
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.80
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 13.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 150
rack travel mm : 10.00
Tolerance mm : \pm 0.05

Pressure hPa : 800
rack travel mm : 13.20
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500

Rated speed rpm : 1125
Del. quantity
cm³/1000 strokes : 146.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : 1500
Rated speed rpm : 700
rack travel mm : 13.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 176.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 112.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : +- 6.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.06.97

Test oil : ISO 4113

Combination No. : 0 402 646 660

Injection pump

Pump designation : PE6P120A32ORS7248
: -10V

EP type number : 0 412 626 946

Governor

Governer design. : RQV275...1150PA986

Governer no. : 0 421 813 920

Cust. part No. : 1300727/1

Customer-spec. information

Customer : DAF

Motor : RT 170 L

Power KW : 170.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Tolerance bar : + 0.1

Overflow quantity

min. l/h : 75

Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : + 1.5

K25

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : + 1.0

Prestroke mm : 5.25

Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.00

Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.60
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 146.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1210
guide sleeve
travel mm : 8.26
Tolerance mm : \pm 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 1.44
Tolerance mm : \pm 0.20

Rated speed rpm : 805
guide sleeve
travel mm : 5.21
Tolerance mm : \pm 0.25

Rated speed rpm : 309
guide sleeve
travel mm : 1.89
Tolerance mm : \pm 0.25

Rated speed rpm : 359
guide sleeve
travel mm : 2.41
Tolerance mm : \pm 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 2.99
Tolerance mm : \pm 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1350

Rack travel in mm : 9.60
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 146.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 9.60

Rated speed rpm : 1200
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1290
Tolerance 1/min : \pm 15

rack travel mm : 0.70
Tolerance mm : \pm 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 82.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : $>$ 7.00

Testing:

Rated speed rpm : 275
rack travel mm : 4.70
Tolerance mm : \pm 0.10

Rated speed rpm : 330

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 10.60
Tolerance mm : \pm 0.05

Rated speed rpm : 1150
rack travel mm : 10.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 10.60
Tolerance mm : \pm 0.05

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 9.50

Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 250
rack travel mm : 10.30
Tolerance mm : \pm 0.05

Pressure hPa : 190
rack travel mm : 9.80
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -

Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 122.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 4.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.08.98
Test oil : ISO 4113

Combination No. : 0 402 648 817

Injection pump
Pump designation : PE8P120A320LS7801
: -10
EP type number : 0 412 628 851

Governor
Governor design. : RQ300/1050PA762-16
Governor no. : 0 421 801 620

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 A
Power KW : 269.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

K28

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 500

Rack travel in mm : 14.05

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 205.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1110
guide sleeve
travel mm : 7.10
Tolerance mm : \pm 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 2.00
Tolerance mm : \pm 0.20

guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500

guide sleeve

travel mm : 6.20

Tolerance mm : \pm 0.10

Rated speed rpm : 1170

guide sleeve

travel mm : 11.50

Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever

position degree : 109

Rated speed rpm : 600

Rack travel in mm : 20.00

Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 500

Aneroid pressure

hPa : 1050

Del. quantity
cm³/1000 strokes : 205.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 97.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.70

Rated speed rpm : 1103

Tolerance 1/min : \pm 8

rack travel mm : 4.00

Rated speed rpm : 1185

Tolerance 1/min : \pm 15

rack travel mm : 0.75

Tolerance mm : \pm 0.75

Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 8.00

Testing:

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : \pm 20

TORQUE CONTROL

Dimension a mm : 0.75
Rated speed rpm : 500
rack travel mm : 14.05
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 12.80
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : -

MEASUREMENT

Pressure hPa : 300
rack travel mm : 1.00
Tolerance mm : \pm 0.10

Pressure hPa : 400
rack travel mm : 2.05
Tolerance mm : \pm 0.15

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1050
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 179.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 10.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 147.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 10.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.08.96

Test oil : ISO 4113

Combination No. : 0 402 735 810

Injection pump

Pump designation : PES5P120A720/3LS7310

EP type number : 0 412 725 817

Governor

Governer design. : RQ325/1000PA1106-1

Governer no. : 0 421 801 700

Cust. part No. : 3-7324

Customer-spec. information

Customer : MAN

Motor : D2865LUH06

Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Tolerance l/h : ± 20.0

Test nozzle holde assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

L04

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.15

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 12.80

Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 5

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 10.80

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 235.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 4.90
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 43.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Speed

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1071
guide sleeve
travel mm : 7.35
Tolerance mm : + 0.10

Rated speed rpm : 325
guide sleeve
travel mm : 2.50
Tolerance mm : + 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.01
Tolerance mm : + 0.10

Rated speed rpm : 777
guide sleeve
travel mm : 7.01
Tolerance mm : + 0.10

Rated speed rpm : 408

guide sleeve
travel mm : 4.50
Tolerance mm : + 0.10

Rated speed rpm : 530
guide sleeve
travel mm : 7.00
Tolerance mm : + 0.10

Rated speed rpm : 1220
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 700

Rack travel in mm : 15.50
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 750
Del. quantity
cm3/1000 strokes : 235.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Speed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 11.20
Rated speed rpm : 1053
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1130
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 8.00

Testing:

Rated speed rpm : 325
rack travel mm : 4.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 10.80
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.60
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 2000
rack travel mm : 12.20
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.70
Tolerance mm : \pm 0.10

2-stage LDA setting

Rated speed rpm : 500
Pressure hPa : 750
rack travel mm : 10.80

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 9.00
Tolerance mm : \pm 0.05

Pressure hPa : 500
rack travel mm : 10.05
Tolerance mm : \pm 0.15

Pressure hPa : 1000
rack travel mm : 11.05
Tolerance mm : \pm 0.10

Pressure hPa : 1250
rack travel mm : 11.65
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 264.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 1000
rack travel mm : 12.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 244.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 169.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.70
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 4.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.98

Test oil : ISO 4113

Combination No. : 0 402 736 855

Injection pump

Pump designation : PES6P120A120RS7206

EP type number : 0 412 726 835

Governor

Governer design. : RQV350...1100PA924

: -9K

Governer no. : 0 421 815 425

Cust. part No. : 3282061

Customer-spec. information

Customer : CUMMINS

Motor : 6CTA

Power KW : 190.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde
assembly

: 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.60

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 9.90

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.00

Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 156.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 20.5

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 5.0

Speed

Tolerance
cm3/1000 strokes : 7.0

Check tolerance
cm3/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1177
guide sleeve
travel mm : 8.80
Tolerance mm : \pm 0.25

Rated speed rpm : 350
guide sleeve
travel mm : 1.36
Tolerance mm : \pm 0.25

Rated speed rpm : 828
guide sleeve
travel mm : 5.95
Tolerance mm : \pm 0.25

Rated speed rpm : 399
guide sleeve
travel mm : 1.98

Tolerance mm : \pm 0.25

Rated speed rpm : 449
guide sleeve
travel mm : 2.67
Tolerance mm : \pm 0.25

Rated speed rpm : 530
guide sleeve
travel mm : 3.46
Tolerance mm : \pm 0.25

Rated speed rpm : 1550
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1375

Rack travel in mm : 11.00
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 156.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Speed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.00
Rated speed rpm : 1165
Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1285
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 6.70

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.00
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 10.90
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 10.10
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 11.95
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1400
rack travel mm : 12.00
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 770
rack travel mm : 11.00
Tolerance mm : \pm 0.05

Pressure hPa : 530
rack travel mm : 9.40
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 270

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 158.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 10.10
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 119.5
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 253.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.10.98
Test oil : ISO 4113

Combination No. : 0 402 736 863

Injection pump
Pump designation : PES6P120A120RS7206
EP type number : 0 412 726 835

Governor
Governor design. : RQV350...1100PA924
: -12K
Governor no. : 0 421 815 433

Cust. part No. : 3282473

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAA
Power KW : 202.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 90
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.15
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 159.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1157
guide sleeve
travel mm : 8.60
Tolerance mm : \pm 0.25

Rated speed rpm : 350
guide sleeve
travel mm : 1.36
Tolerance mm : \pm 0.25

Rated speed rpm : 820
guide sleeve
travel mm : 5.90
Tolerance mm : \pm 0.25

Rated speed rpm : 399
guide sleeve
travel mm : 1.98
Tolerance mm : \pm 0.25

Rated speed rpm : 449
guide sleeve
travel mm : 2.54
Tolerance mm : \pm 0.25

Rated speed rpm : 540
guide sleeve
travel mm : 3.56
Tolerance mm : \pm 0.25

Rated speed rpm : 1550
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1420

Rack travel in mm : 9.00
Tolerance mm : \pm 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : \pm 4.0

control lever
position degree : 117.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.10

Rated speed rpm : 1145

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1275

Tolerance 1/min : \pm 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1350

LOW IDLE

control lever

position degree : 73.0

tolerance degree : \pm 4.0

control lever

position degree : 14.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : $>$ 6.80

Testing:

Rated speed rpm : 350

rack travel mm : 5.30

Tolerance mm : \pm 0.10

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1100

rack travel mm : 12.15

Tolerance mm : \pm 0.05

Rated speed rpm : 600

rack travel mm : 11.20

Tolerance mm : \pm 0.10

Rated speed rpm : 800

rack travel mm : 11.80

Tolerance mm : \pm 0.10

ANEROID/ALTITUDE

COMPENSATOR TEST

SETTING

Rated speed rpm : 1100

Pressure hPa : 1200

rack travel mm : 12.15

Tolerance mm : \pm 0.05

Rated speed rpm : 1100

Pressure hPa : -

rack travel mm : 8.10

Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 300

rack travel mm : 8.90

Tolerance mm : \pm 0.20

Pressure hPa : 600

rack travel mm : 11.20

Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : $>$ 100

Rated speed rpm : $<$ 270

Check

speed 1/min : $>$ 80

Check

speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200

Rated speed rpm : 600

Del. quantity

cm³/1000 strokes : 177.0

Tolerance

cm³/1000 strokes : \pm 3.0

Check tolerance

cm³/1000S. : \pm 6.0

Speed

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

rack travel mm	:	11.80
Tolerance mm	:	± 0.10

Aneroid pressure		
hPa	:	-
Rated speed rpm	:	500
Del. quantity		
cm ³ /1000 strokes	:	107.0
Tolerance		
cm ³ /1000 strokes	:	± 2.0
Check tolerance		
cm ³ /1000S.	:	± 4.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity		
cm ³ /1000 strokes	:	260.0
Tolerance		
cm ³ /1000 strokes	:	± 20.0
Check tolerance		
cm ³ /1000S.	:	± 24.0

LOW IDLE

Rated speed rpm	:	350
Rack travel in mm		
Tolerance mm	:	± 0.10
Del. quantity		
cm ³ /1000 strokes	:	26.0
Tolerance		
cm ³ /1000 strokes	:	± 3.0
Check tolerance		
cm ³ /1000S.	:	± 5.0
Speed		
Tolerance		
cm ³ /1000 strokes	:	7.0
Check tolerance		
cm ³ /1000S.	:	11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.08.98
Test oil : ISO 4113
Combination No. : 0 402 744 802
Injection pump
Pump designation : PES4P120A320RS7312
: -1
EP type number : 0 412 724 803
Governor
Governor design. : RQ400/1200PA1132-1
Governor no. : 0 421 801 794
Cust. part No. : 51.11103-7469

Customer-spec. information
Customer : MAN
Motor : D0824LFLO6/LOH05
Power KW : 114.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0
Test nozzle holder
assembly : 1 688 901 103
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

L16

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

Check
tolerance mm : ± 0.10

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 206.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400

Rack travel in mm : 4.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 40.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1258
guide sleeve
travel mm : 7.48
Tolerance mm : ± 0.15

Rated speed rpm : 400
guide sleeve
travel mm : 3.62
Tolerance mm : ± 0.20

Rated speed rpm : 1200
guide sleeve
travel mm : 7.00
Tolerance mm : ± 0.10

Rated speed rpm : 472
guide sleeve
travel mm : 5.36
Tolerance mm : ± 0.10

Rated speed rpm : 580

guide sleeve
travel mm : 7.00
Tolerance mm : ± 0.10

Rated speed rpm : 1390
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 15.50
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 206.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 12.05
Rated speed rpm : 1250
Tolerance 1/min : ± 8

rack travel mm : 4.00
Rated speed rpm : 1335
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
CRT mm min. : $>$ 7.00

Testing:

Rated speed rpm : 400
rack travel mm : 4.80
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 470
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Rated speed rpm : 1200
rack travel mm : 13.05
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.65
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 140
rack travel mm : 8.55
Tolerance mm : \pm 0.15

Pressure hPa : 500
rack travel mm : 11.85
Tolerance mm : \pm 0.25

Start interlock

Rated speed rpm : $<$ 280
Rated speed rpm : $>$ 320

Check
speed 1/min : $<$ 260
Check
speed 1/min : $>$ 340

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 218.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 206.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 4.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.06.96
Test oil : ISO 4113

Combination No. : 0 402 746 616

Injection pump
Pump designation : PES6P130A720LS7422
EP type number : 0 412 736 809

Governor
Governor design. : RQV300...900PA946-1
Governor no. : 0 421 813 992

Cust. part No. :

Customer-spec. information
Customer : IVECO-AIFO
Motor : 8217 SRI

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 200
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

L20

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Check
tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.05

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 5.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Rated speed rpm : 300

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 7.0

Spread
Tolerance

cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 959
guide sleeve
travel mm : 7.98
Tolerance mm : \pm 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.17
Tolerance mm : \pm 0.20

Rated speed rpm : 766
guide sleeve
travel mm : 5.97
Tolerance mm : \pm 0.25

Rated speed rpm : 540

guide sleeve
travel mm : 3.52
Tolerance mm : \pm 0.25

Rated speed rpm : 1220
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1070

Rack travel in mm : 11.05
Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.00
Rated speed rpm : 945
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1035
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50

Tolerance mm : \pm 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 79.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 6.10

Testing:

Rated speed rpm : 300
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Rated speed rpm : 365

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 12.05
Tolerance mm : \pm 0.05

Rated speed rpm : 550
rack travel mm : 12.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1200
rack travel mm : 12.05
Tolerance mm : \pm 0.05

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 9.70
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 550
Pressure hPa : 420
rack travel mm : 10.30

L22

Tolerance mm : \pm 0.15

Pressure hPa : 450
rack travel mm : 10.85
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 256.0
Tolerance
cm³/1000 strokes : \pm 3.5
Check tolerance
cm³/1000S. : \pm 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 172.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 5.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 7.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000s. : 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.02.97

Test oil : ISO 4113

Combination No. : 0 402 746 629

Injection pump

Pump designation : PES6P120A320RS7324

EP type number : 0 412 726 905

Governor

Governer design. : RQ300/1200PA1335

Governer no. : 0 421 801 816

Cust. part No. : 51.11103-7565

Customer-spec. information

Customer : MAN

Motor : D 0826 LOH 15

Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 175

Tolerance l/h : ± 10.0

Test nozzle holde assembly

: 1 688 901 103

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.15

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 12.00

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.45

Tolerance mm : ± 0.05

Del. quantity cm3/1000 strokes	: 190.0
Tolerance cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 4.0
Spreed	
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000S.	: 12.0

Rated speed rpm	: 300
Rack travel in mm	: 5.20
Tolerance mm	: ± 0.10
Del. quantity cm3/1000 strokes	: 29.0
Tolerance cm3/1000 strokes	: ± 3.0
Check tolerance cm3/1000S.	: ± 6.0
Spreed	
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1245
guide sleeve travel mm	: 6.37
Tolerance mm	: ± 0.15
Rated speed rpm	: 300
guide sleeve travel mm	: 1.97
Tolerance mm	: ± 0.20
Rated speed rpm	: 1200
guide sleeve travel mm	: 6.00
Tolerance mm	: ± 0.10
Rated speed rpm	: 366

guide sleeve travel mm	: 4.60
Tolerance mm	: ± 0.10

Rated speed rpm	: 460
guide sleeve travel mm	: 6.00
Tolerance mm	: ± 0.10

Rated speed rpm	: 1420
guide sleeve travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever position degree	: 109
Rated speed rpm	: 600

Rack travel in mm	: 20.00
Tolerance mm	: ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1200
Aneroid pressure hPa	: 1500
Del. quantity cm3/1000 strokes	: 190.0
Tolerance cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 4.0
Spreed	
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000S.	: 12.0

CONTROL LEVER

control lever position degree	: 93.0
tolerance degree	: ± 4.0

RATED SPEED	
rack travel mm	: 11.45
Rated speed rpm	: 1245
Tolerance 1/min	: ± 8

rack travel mm	: 4.00
Rated speed rpm	: 1330
Tolerance 1/min	: ± 15

rack travel mm : 0.25
Tolerance mm : \pm 0.25
Rated speed rpm : 1460

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 8.20

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 365
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.45
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 12.45
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.60
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 140
rack travel mm : 8.95
Tolerance mm : \pm 0.05

Pressure hPa : 700
rack travel mm : 11.75
Tolerance mm : \pm 0.15

Start interlock

Rated speed rpm : $>$ 215
Rated speed rpm : $<$ 240

Check
speed 1/min : $>$ 195

Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
rack travel mm : 12.45
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 199.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 129.0
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.01.97

Test oil : ISO 4113

Combination No. : 0 402 746 630

Injection pump

Pump designation : PES6P130A720LS7422

EP type number : 0 412 736 809

Governor

Governer design. : RQV300...900PA1336

Governer no. : 0 421 814 191

Cust. part No. :

Customer-spec. information

Customer : IVECO-AIFO

Motor : 8217 SRI 10.00

Power KW : 265.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5

Overflow quantity

min. l/h : 200

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.05

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 12.00

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Check

tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.05
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Rated speed rpm : 300

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 7.0

Speed

Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 959
guide sleeve
travel mm : 7.98
Tolerance mm : \pm 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.17
Tolerance mm : \pm 0.20

Rated speed rpm : 766
guide sleeve
travel mm : 5.97
Tolerance mm : \pm 0.25

Rated speed rpm : 550
guide sleeve
travel mm : 3.62
Tolerance mm : \pm 0.25

Rated speed rpm : 1220
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.00
Rated speed rpm : 945
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1035
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 79.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 6.05

Testing:

Rated speed rpm : 300
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Rated speed rpm : 365

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 12.05
Tolerance mm : \pm 0.05

Rated speed rpm : 550
rack travel mm : 12.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1200
rack travel mm : 12.05
Tolerance mm : \pm 0.05

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 9.70
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 420
rack travel mm : 10.30
Tolerance mm : \pm 0.15

Pressure hPa : 450
rack travel mm : 10.85
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 256.0
Tolerance
cm³/1000 strokes : \pm 3.5
Check tolerance
cm³/1000S. : \pm 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 172.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 5.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 7.0
Speed

Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.03.98
Test oil : ISO 4113

Combination No. : 0 402 746 844

Injection pump
Pump designation : PES6P120A32ORS7162
EP type number : 0 412 726 819

Governor
Governor design. : RQ750PA836-2
Governor no. : 0 421 801 628

Cust. part No. :

Customer-spec. information
Customer : PERKINS
Motor : 2006 TAG
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 4- 2- 6- 3-
: 5

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 380.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 757
guide sleeve
travel mm : 1.84
Tolerance mm : \pm 0.25

Rated speed rpm : 930
guide sleeve
travel mm : 42.98
Tolerance mm : \pm 0.25

Rated speed rpm : 820
guide sleeve
travel mm : 9.41
Tolerance mm : \pm 0.25

Rated speed rpm : 824
guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 880

guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 380.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 89.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 12.00

Rated speed rpm : 784
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 820

Rated speed rpm : 751
rack travel mm : 12.00

Rated speed rpm : 785
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 820

Rated speed rpm : 752
rack travel mm : 12.00

Rated speed rpm : 786
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 820

Rated speed rpm : 753
rack travel mm : 12.00

Rated speed rpm : 787
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 820

Rated speed rpm : 754
rack travel mm : 12.00

Rated speed rpm : 788
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 820

Rated speed rpm : 755
rack travel mm : 12.00

Rated speed rpm : 789
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 820

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 320.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.02.97

Test oil : ISO 4113

Combination No. : 0 402 746 967

Injection pump

Pump designation : PES6P120A320RS7324

EP type number : 0 412 726 905

Governor

Governer design. : RQ300/1200PA1132

Governer no. : 0 421 801 708

Cust. part No. : 51.11103-7296

Customer-spec. information

Customer : MAN

Motor : D0826LF11/LFLO3

Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Overflow quantity

min. L/h : 175

Tolerance L/h : ± 10.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.15

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 12.00

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.45

Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 190.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

Rated speed rpm	: 300
Rack travel in mm	: 5.20
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 29.0
Tolerance cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spreed	
Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1257
guide sleeve travel mm	: 6.37
Tolerance mm	: ± 0.10
Rated speed rpm	: 300
guide sleeve travel mm	: 1.41
Tolerance mm	: ± 0.10
Rated speed rpm	: 1200
guide sleeve travel mm	: 6.00
Tolerance mm	: ± 0.10
Rated speed rpm	: 425

guide sleeve travel mm	: 4.31
Tolerance mm	: ± 0.10

Rated speed rpm	: 530
guide sleeve travel mm	: 6.00
Tolerance mm	: ± 0.10

Rated speed rpm	: 1430
guide sleeve travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever position degree	: 109
Rated speed rpm	: 600

Rack travel in mm	: 20.00
Tolerance mm	: ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1200
Aneroid pressure hPa	: 1500
Del. quantity cm ³ /1000 strokes	: 190.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

CONTROL LEVER

control lever position degree	: 97.0
tolerance degree	: ± 4.0

RATED SPEED rack travel mm	: 11.45
Rated speed rpm	: 1245
Tolerance 1/min	: ± 8

rack travel mm	: 4.00
Rated speed rpm	: 1328
Tolerance 1/min	: ± 15

rack travel mm : 0.25
Tolerance mm : \pm 0.25
Rated speed rpm : 1460

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
CRT mm min. : $>$ 6.50

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 375
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.4^c
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 12.45
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.60
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 140
rack travel mm : 8.95
Tolerance mm : \pm 0.05

Pressure hPa : 700
rack travel mm : 11.75
Tolerance mm : \pm 0.15

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
rack travel mm : 12.45
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 199.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 129.0
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.97
Test oil : ISO 4113

Combination No. : 0 402 746 984

Injection pump
Pump designation : PES6P120A320RS7324
EP type number : 0 412 726 905

Governor
Governor design. : RQV300...1200PA1131
Governor no. : 0 421 814 088

Cust. part No. : 51.11103-7330

Customer-spec. information

Customer : MAN
Motor : D0826LF11/LFL03
Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 175
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.45
Tolerance mm : ± 0.05

Del. quantity cm3/1000 strokes	: 190.0
Tolerance cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 4.0
Spreed	
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000S.	: 12.0

Rated speed rpm	: 300
Rack travel in mm	: 5.40
Tolerance mm	: ± 0.10
Del. quantity cm3/1000 strokes	: 29.0
Tolerance cm3/1000 strokes	: ± 3.0
Check tolerance cm3/1000S.	: ± 6.0
Spreed	
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1263
guide sleeve travel mm	: 10.49
Tolerance mm	: ± 0.25
Rated speed rpm	: 300
guide sleeve travel mm	: 1.69
Tolerance mm	: ± 0.25
Rated speed rpm	: 806
guide sleeve travel mm	: 5.85
Tolerance mm	: ± 0.25
Rated speed rpm	: 347

guide sleeve travel mm	: 2.36
Tolerance mm	: ± 0.25
Rated speed rpm	: 397
guide sleeve travel mm	: 3.01
Tolerance mm	: ± 0.25
Rated speed rpm	: 440
guide sleeve travel mm	: 3.37
Tolerance mm	: ± 0.25
Rated speed rpm	: 1470
guide sleeve travel mm	: 13.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1320
Rack travel in mm	: 11.45
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1200
Aneroid pressure hPa	: 1500
Del. quantity cm3/1000 strokes	: 190.0
Tolerance cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 4.0
Spreed	
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000S.	: 12.0

CONTROL LEVER

control lever position degree	: 123.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 11.45
Rated speed rpm	: 1245
Tolerance 1/min	: ± 5

rack travel mm : 4.00
Rated speed rpm : 1340
Tolerance 1/min : \pm 15

rack travel mm : 0.25
Tolerance mm : \pm 0.25
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 83.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : $>$ 6.50

Testing:

Rated speed rpm : 300
rack travel mm : 5.40
Tolerance mm : \pm 0.10

Rated speed rpm : 360

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.45
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 12.45
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : -
rack travel mm : 8.60
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 140
rack travel mm : 8.95
Tolerance mm : \pm 0.05

Pressure hPa : 700
rack travel mm : 11.85
Tolerance mm : \pm 0.15

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 240

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
rack travel mm : 12.45
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 199.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 129.0

Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.06.98
Test oil : ISO 4113

Combination No. : 0 402 946 013

Injection pump
Pump designation : PES6P120A320RS8028
EP type number : 0 412 926 021

Governor
Governor design. : RQV275...1250PA1189K
Governor no. : 0 421 815 974

Cust. part No. : CCEP 5146A 66-220

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 06.02.26Y41
Power KW : 184.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : -0.25
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.
mm : 21.00
and maximum rack
travel : 11.00
Difference ° CS : 2.25

CRT ZERO POSITION

Rack travel in mm : 14.30
Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 1250

Del. quantity
cm³/1000 strokes : 274.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -7.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 47.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1332
guide sleeve
travel mm : 10.07
Tolerance mm : \pm 0.25

Rated speed rpm : 275
guide sleeve
travel mm : 1.10
Tolerance mm : \pm 0.25

Rated speed rpm : 912
guide sleeve
travel mm : 6.79
Tolerance mm : \pm 0.25

Rated speed rpm : 412
guide sleeve
travel mm : 2.53
Tolerance mm : \pm 0.25

Rated speed rpm : 462
guide sleeve
travel mm : 3.16
Tolerance mm : \pm 0.25

Rated speed rpm : 550
guide sleeve
travel mm : 3.97
Tolerance mm : \pm 0.25

Rated speed rpm : 1630
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1420

Rack travel in mm : 13.50
Tolerance mm : \pm 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1600
Del. quantity
cm³/1000 strokes : 274.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 303.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1325
Tolerance 1/min : \pm 15

rack travel mm : -10.30
Rated speed rpm : 1480
Tolerance 1/min : \pm 5

rack travel mm : -13.80
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 252.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : $<$ -6.80

Testing:

Rated speed rpm : 275
rack travel mm : -7.50
Tolerance mm : \pm 0.10

Rated speed rpm : 380

TORQUE CONTROL

Rated speed rpm : 1250

Rated speed rpm : 800
rack travel mm : -0.75
Tolerance mm : \pm 0.10

Rated speed rpm : 350
rack travel mm : -4.10
Tolerance mm : \pm 0.25

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1600
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
Pressure hPa : -
rack travel mm : -4.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 240
rack travel mm : -3.50
Tolerance mm : \pm 0.20

Pressure hPa : 480
rack travel mm : -1.50
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 175
Rated speed rpm : $<$ 240

Check
speed 1/min : $>$ 155
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 285.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

rack travel mm : -4.10
Tolerance mm : \pm 0.25

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 181.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : -7.50
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 47.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.98
Test oil : ISO 4113

Combination No. : 0 402 946 015

Injection pump
Pump designation : PES6P120A32ORS8038
EP type number : 0 412 926 025

Governor
Governor design. : RQV250...1000PA1239
Governor no. : 0 421 814 157

Cust. part No. : 1383795

Customer-spec. information
Customer : SCANIA
Motor : DSC 913

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.90
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 300.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 8.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 40.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1058
guide sleeve
travel mm : 7.89
Tolerance mm : \pm 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : \pm 0.20

Rated speed rpm : 748
guide sleeve
travel mm : 6.17
Tolerance mm : \pm 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 4.09
Tolerance mm : \pm 0.25

Rated speed rpm : 1470
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 300.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 8.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 57.0
tolerance degree : \pm 4.0

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.90
Rated speed rpm : 1045
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1235
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 87.0
tolerance degree : \pm 4.0

control lever
position degree : 23.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : $>$ 9.80

Testing:

Rated speed rpm : 250
rack travel mm : 7.60
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 11.15

M21

Tolerance mm : \pm 0.15

Pressure hPa : 750
rack travel mm : 12.15
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $<$ 190
Rated speed rpm : $>$ 150

Check
speed 1/min : $<$ 210
Check
speed 1/min : $>$ 130

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 295.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 7.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.98
Test oil : ISO 4113

Combination No. : 0 402 946 026A

Injection pump
Pump designation : PES6P120A720RS8045
EP type number : 0 412 926 028

Governor
Governor design. : RQV350...1100PA1305K
Governor no. : 0 421 815 967

Cust. part No. : 1388633

Customer-spec. information
Customer : SCANIA
Motor : DSI11 75M

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 80
Tolerance l/h : ± 10.0

Test nozzle holder assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.75
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 302.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 9.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 4.10
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1166
guide sleeve
travel mm : 10.16
Tolerance mm : \pm 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 2.00
Tolerance mm : \pm 0.20

Rated speed rpm : 755
guide sleeve
travel mm : 6.14
Tolerance mm : \pm 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 4.07
Tolerance mm : \pm 0.25

Rated speed rpm : 1400
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1237

Rack travel in mm : 12.75
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 302.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 9.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 65.0
tolerance degree : \pm 4.0

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 10.70
Rated speed rpm : 1145
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10
rack travel mm : 4.00

Rated speed rpm : 1247
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 20.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
CRT mm min. : $>$ 6.50

Testing:

Rated speed rpm : 350
rack travel mm : 4.10
Tolerance mm : \pm 0.30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 10.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1500
rack travel mm : 13.75
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
Pressure hPa : -
rack travel mm : 7.10

M25

Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 340
rack travel mm : 8.35
Tolerance mm : \pm 0.25

Pressure hPa : 800
rack travel mm : 10.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 163.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 4.10
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.08.98
Test oil : ISO 4113

Combination No. : 0 402 946 031

Injection pump
Pump designation : PES6P120A32ORS8050
EP type number : 0 412 926 032

Governor
Governor design. : RQ250/1000PA1342
Governor no. : 0 421 801 822

Cust. part No. : 1388694

Customer-spec. information
Customer : SCANIA
Motor : DSI 9E01
Power KW : 170.0

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 095

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 80
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.30
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 240.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 285

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1061
guide sleeve
travel mm : 4.72
Tolerance mm : \pm 0.15

Rated speed rpm : 285
guide sleeve
travel mm : 2.17
Tolerance mm : \pm 0.20

Rated speed rpm : 1000
guide sleeve
travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 410
guide sleeve
travel mm : 3.50
Tolerance mm : \pm 0.10

Rated speed rpm : 530
guide sleeve
travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1670
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 108
Rated speed rpm : 600

Rack travel in mm : 16.00
Tolerance mm : \pm 0.60

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 7.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 43.0
tolerance degree : \pm 4.0

control lever
position degree : 105.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.30
Rated speed rpm : 1058

Tolerance 1/min : \pm 8
 Check
 speed 1/min : \pm 10

 rack travel mm : 4.00
 Rated speed rpm : 1245
 Tolerance 1/min : \pm 15
 Check
 speed 1/min : \pm 20

 rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 85.0
 tolerance degree : \pm 4.0

control lever
 position degree : 21.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

 CRT mm min. : $>$ 8.00

Testing:

Rated speed rpm : 285
 rack travel mm : 5.20
 Tolerance mm : \pm 0.10

 rack travel mm : $<$ 2.00
 Rated speed rpm : 390
 Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 700
 rack travel mm : 12.30
 Tolerance mm : \pm 0.05

Rated speed rpm : 1000
 rack travel mm : 12.30
 Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

N01

Rated speed rpm : 500
 Pressure hPa : 1500
 rack travel mm : 12.30
 Tolerance mm : \pm 0.05

Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : 10.40
 Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

 Pressure hPa : 275
 rack travel mm : 10.90
 Tolerance mm : \pm 0.15

Pressure hPa : 425
 rack travel mm : 12.10
 Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
 Rated speed rpm : $<$ 170

Check
 speed 1/min : $>$ 80
 Check
 speed 1/min : $<$ 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1500
 Rated speed rpm : 1000
 Del. quantity
 cm³/1000 strokes : 214.0
 Tolerance
 cm³/1000 strokes : \pm 4.0
 Check tolerance
 cm³/1000S. : \pm 6.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 210.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 285

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.01.98
Test oil : ISO 4113

Combination No. : 0 403 436 109

Injection pump
Pump designation : PES6MW100/120RS1143
EP type number : 0 413 406 137

Governor
Governor design. : RQV300...1050MW82-4
Governor no. : 0 420 083 168

Cust. part No. : 3915581

Customer-spec. information
Customer : CUMMINS
Motor : 6 CTA-830
Power KW : 175.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 017

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.10
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 149.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 8.00
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 18.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100
guide sleeve
travel mm : 8.00
Tolerance mm : \pm 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 1.30
Tolerance mm : \pm 0.20

Rated speed rpm : 550
guide sleeve
travel mm : 3.30
Tolerance mm : \pm 0.30

Rated speed rpm : 1210
guide sleeve
travel mm : 9.20
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 900
Del. quantity
cm3/1000 strokes : 149.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.0

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 101.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.60
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 9.30

Testing:

Rated speed rpm : 300
rack travel mm : 8.00
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.65
Tolerance mm : \pm 0.05

Rated speed rpm : 700

rack travel mm : 12.65
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.65
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.30
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 450
rack travel mm : 12.20
Tolerance mm : \pm 0.20

Pressure hPa : 225
rack travel mm : 10.90
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 147.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 8.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.12.97

Test oil : ISO 4113

Combination No. : 0 403 446 216

Injection pump

Pump designation : PES6MW100/720RS1144

EP type number : 0 413 406 138

Governor

Governer design. : RQV300...1400MW48-8

Governer no. : 0 420 083 175

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ

Motor : OM 366 A

Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly

: 1 688 901 101

Opening pressure
bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 715 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 3.55

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.75

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 78.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 7.90

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 11.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1453
guide sleeve
travel mm : 8.30
Tolerance mm : ± 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.22
Tolerance mm : ± 0.20

Rated speed rpm : 594
guide sleeve
travel mm : 3.30
Tolerance mm : ± 0.25

Rated speed rpm : 400
guide sleeve
travel mm : 2.30
Tolerance mm : ± 0.25

Rated speed rpm : 1770
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1590

Rack travel in mm : 9.75
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 111.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 9.70
Rated speed rpm : 1445
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1550
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 80.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 10.00

Testing:

Rated speed rpm : 300
rack travel mm : 7.90
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 10.75
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 11.80
Tolerance mm : \pm 0.10

Rated speed rpm : 1200
rack travel mm : 10.95
Tolerance mm : \pm 0.15

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 230

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

rack travel mm : 11.80

Tolerance mm : \pm 0.10

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 7.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 19.03.98

Test oil : ISO 4113

Combination No. : 0 403 466 131

Injection pump

Pump designation : PES6MW100/120RS1184

EP type number : 0 413 406 171

Governor

Governor design. : RSV375...1250MW2A334

: -1

Governor no. : 0 420 085 207

Cust. part No. : 3281954

Customer spec. information

Customer : CUMMINS

Motor : 6 BTA 5.9

Power KW : 140.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

N09

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 3.55

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.35

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 111.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 375

Rack travel in mm : 7.25

Tolerance mm : ± 0.25

Del. quantity

cm3/1000 strokes : 18.0

Tolerance

cm3/1000 strokes : ± 2.0

Check tolerance

cm3/1000S. : ± 4.5

Spread

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : ± 0.35

governor spring

pre-tension

click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure

hPa : 800

Del. quantity

cm3/1000 strokes : 111.0

Tolerance

cm3/1000 strokes : ± 1.0

Check tolerance

cm3/1000S. : ± 3.0

Spread

Tolerance

cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

CONTROL LEVER

control lever

position degree : 111.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.30

Rated speed rpm : 1300

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1380

Tolerance 1/min : ± 15

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1550

rack travel mm : 4.00

Rated speed rpm : 1435

Tolerance 1/min : ± 15

LOW IDLE

control lever

position degree : 87.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 375

rack travel mm : 6.75

Tolerance mm : ± 0.25

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 375

rack travel mm : 7.25

Tolerance mm : ± 0.25

TORQUE CONTROL

Rated speed rpm : 1250

rack travel mm : 10.35

Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 10.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.90
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 470
rack travel mm : 10.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 375

Rack travel in mm : 7.25
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.12.97
Test oil : ISO 4113
Combination No. : 0 403 474 019
Injection pump
Pump designation : PES4MW100/720RS1151
EP type number : 0 413 404 104

Governor
Governor design. : RSV350...1200MWOA346
: -3
Governor no. : 0 420 085 179

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 364 A
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

N12

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 88.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 6.40

Tolerance mm : \pm 0.40

Del. quantity

cm³/1000 strokes : 12.0

Tolerance

cm³/1000 strokes : \pm 2.0

Check tolerance

cm³/1000S. : \pm 4.5

Spread

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree - 3

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : \pm 0.35

governor spring

pre-tension

click setting x : 5.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure

hPa : 700

Del. quantity

cm³/1000 strokes : 88.0

Tolerance

cm³/1000 strokes : \pm 1.0

Check tolerance

cm³/1000S. : \pm 3.0

Spread

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 6.0

CONTROL LEVER

control lever

position degree : 108.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 1.00

Tolerance mm : \pm 0.70

Rated speed rpm : 1450

rack travel mm : 4.00

Rated speed rpm : 1340

Tolerance 1/min : \pm 15

rack travel mm : 10.50

Rated speed rpm : 1248

Tolerance 1/min : \pm 8

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1240

rack travel mm : 10.50

Rated speed rpm : 1289

Tolerance 1/min : \pm 4

rack travel mm : 4.00

Rated speed rpm : 1241

rack travel mm : 10.50

Rated speed rpm : 1290

Tolerance 1/min : \pm 4

rack travel mm : 4.00

Rated speed rpm : 1242

rack travel mm : 10.50

Rated speed rpm : 1291

Tolerance 1/min : \pm 4

rack travel mm : 4.00

Rated speed rpm : 1243

rack travel mm : 10.50

Rated speed rpm : 1292

Tolerance 1/min : \pm 4

rack travel mm : 4.00

Rated speed rpm : 1244

rack travel mm : 10.50

Rated speed rpm : 1293

Tolerance 1/min : \pm 4
rack travel mm : 4.00

Rated speed rpm : 1245
rack travel mm : 10.50

Rated speed rpm : 1294
Tolerance 1/min : \pm 4
rack travel mm : 4.00

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

Testing:

Rated speed rpm : 350
rack travel mm : 6.40
Tolerance mm : \pm 0.40

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 11.55
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 12.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

CRT ZERO POSITION

Rack travel in mm : 9.95
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.40
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 375
rack travel mm : 1.70
Tolerance mm : \pm 0.10

Pressure hPa : 200
rack travel mm : 0.50
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 87.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

rack travel mm : 12.00
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 6.40

Tolerance mm : \pm 0.40

Del. quantity

cm³/1000 strokes : 12.0

Tolerance

cm³/1000 strokes : \pm 2.0

Check tolerance

cm³/1000S. : \pm 4.5

Speed

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.10.98
Test oil : ISO 4113

Combination No. : 0 400 876 405

Injection pump
Pump designation : PES6A95D410RS2835
EP type number : 0 410 896 896

Governor
Governor design. : RSV400...1050A2C2263
 : -8L
Governor no. : 0 420 232 615

Cust. part No. : 87 801 608

Customer-spec. information

Customer : FNH-GEOTECH
Motor : 7.5 L-8640 Trak
Power KW : 131.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 110.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Rated speed rpm : 450

Rack travel in mm : 5.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

CONTROL LEVER

control lever
position degree : 101.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1093
rack travel mm : 11.20

Rated speed rpm : 1168
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1094
rack travel mm : 11.20

Rated speed rpm : 1169
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1095
rack travel mm : 11.20

Rated speed rpm : 1170
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1096
rack travel mm : 11.20

Rated speed rpm : 1171
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1097
rack travel mm : 11.20

Rated speed rpm : 1172
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1300

Rated speed rpm : 1098
rack travel mm : 11.20

Rated speed rpm : 1173
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 77.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 450
rack travel mm : 5.70
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 14.10
Tolerance mm : \pm 0.10

Rated speed rpm : 925
rack travel mm : 13.25
Tolerance mm : \pm 0.15

Rated speed rpm : 1050
rack travel mm : 11.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.10
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.65
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 500
rack travel mm : 11.65
Tolerance mm : \pm 0.20

Pressure hPa : 800
rack travel mm : 13.60
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 137.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

rack travel mm : 13.25
Tolerance mm : \pm 0.15

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 90.0

Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 13.0

LOW IDLE

Rated speed rpm : 450

Rack travel in mm : 5.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.97
Test oil :
Combination No. : 9 400 030 708FS

Injection pump
Pump designation : PES6A100D320/3RS3506
EP type number : 9 410 037 236

Governor
Governor design. : RQV400...1250AB1323R
Governor no. : F 002 A30 001

Cust. part No. : TATA-CUMMINS

Customer spec. information
Customer : CUMMINS
Motor : 6BT - 125 ps

TEST BENCH REQUIREMENTS

Inlet line : 3.2;

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 9 451 037 430

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 5.75
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 78.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 400

Rack travel in mm : 6.40

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 10.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1347
guide sleeve
travel mm : 8.48
Tolerance mm : \pm 0.15

Rated speed rpm : 400
guide sleeve
travel mm : 1.71
Tolerance mm : \pm 0.20

Rated speed rpm : 880
guide sleeve
travel mm : 4.97
Tolerance mm : \pm 0.25

Rated speed rpm : 499
guide sleeve
travel mm : 2.75

Tolerance mm : \pm 0.25

Rated speed rpm : 549
guide sleeve
travel mm : 3.30
Tolerance mm : \pm 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 3.37
Tolerance mm : \pm 0.25

Rated speed rpm : 1620
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1250

Rack travel in mm : 16.00
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 61.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 9.30
Rated speed rpm : 1335
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1430
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1490

LOW IDLE

control lever
position degree : 15.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : $>$ 9.00

Testing:

Rated speed rpm : 400
rack travel mm : 6.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 630
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.30
Tolerance mm : \pm 0.05

Rated speed rpm : 550
rack travel mm : 10.30
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 10.30
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 1000
rack travel mm : 10.30
Tolerance mm : \pm 0.10

Rated speed rpm : 800
Pressure hPa : -
rack travel mm : 10.30
Tolerance mm : \pm 0.10

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MEASUREMENT

Rated speed rpm : 800

Pressure hPa : 500
rack travel mm : 10.30
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : $>$ 120
Rated speed rpm : $<$ 300

Check
speed 1/min : $>$ 100
Check
speed 1/min : $<$ 340

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 60.2
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 10.0

Aneroid pressure
hPa : -
Rated speed rpm : 750
rack travel mm : 10.30
Tolerance mm : \pm 0.15
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 10.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.40
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 6.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.09.97
Test oil : ISO 4113

Combination No. : E 040 101 500

Injection pump
Pump designation : PES6A100D320/3RS3506
EP type number : 0 042 096 200

Governor
Governor design. : RQV400...1250AB1328R
Governor no. :

Cust. part No. : TATA-CUMMINS

Customer-spec. information
Customer : CUMMINS
Motor : 6BT - 125 ps

TEST BENCH REQUIREMENTS

Inlet line : 1.1;

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 9 451 037 430

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 5.75
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.30
Tolerance mm : ± 0.05

Rack travel in mm : 6.40
Tolerance mm : \pm 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1308
guide sleeve
travel mm : 8.09
Tolerance mm : \pm 0.15

Rated speed rpm : 400
guide sleeve
travel mm : 1.71
Tolerance mm : \pm 0.20

Rated speed rpm : 860
guide sleeve
travel mm : 4.87
Tolerance mm : \pm 0.25

Rated speed rpm : 499
guide sleeve
travel mm : 2.75
Tolerance mm : \pm 0.25

Rated speed rpm : 549
guide sleeve
travel mm : 3.30
Tolerance mm : \pm 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 3.37
Tolerance mm : \pm 0.25

Rated speed rpm : 1620
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1250

Rack travel in mm : 14.00
Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 58.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 9.30
Rated speed rpm : 1300
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1400
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1490

LOW IDLE

control lever
position degree : 15.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 9.00

Testing:

Rated speed rpm : 400
rack travel mm : 6.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 630
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.30
Tolerance mm : \pm 0.05

Rated speed rpm : 550
rack travel mm : 10.30
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 10.30
Tolerance mm : \pm 0.15

Start interlock

Rated speed rpm : > 170
Rated speed rpm : > 300

Check
speed 1/min : < 190
Check
speed 1/min : < 340

FUEL DELIVERY CHARACTERISTICS

rack travel mm : 10.30
Tolerance mm : \pm 0.15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.40
Tolerance mm : \pm 0.50

LOW IDLE

Rack travel in mm : 6.40
Tolerance mm : \pm 0.10

End of test specification sheet